

The World's work ...

Walter Hines
Page, Arthur
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THE WORLD'S WORK

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ARTHUR W. PAGE, EDITOR

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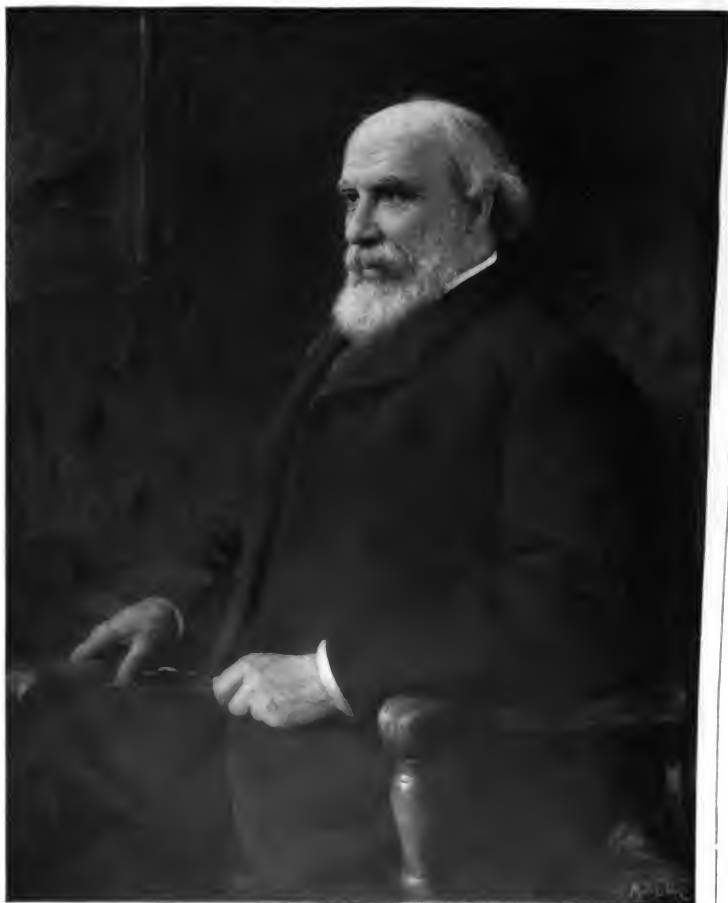
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JAMES J. HILL

FROM THE ORIGINAL PAINTING BY ADOLFO MUTTER-URY, NOW IN THE POSSESSION OF THE CHAMBER OF COMMERCE OF THE STATE OF NEW YORK. THE SECOND INSTALLMENT OF THE AUTHORIZED BIOGRAPHY OF MR. HILL APPEARS IN THIS ISSUE OF THE "WORLD'S WORK."

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NUMBER 1

THE MARCH OF EVENTS

THE President has come to his accounting to the people for his care of their interests. He and his record have been the issue of the campaign to a peculiar extent, for Mr. Hughes has not been a compelling candidate. The question in the minds of the voters has been, "Shall I or shall I not support the President for another term?"

The President very much deserves support. Taking him as a director of the Government, we have not seen his like in the White House for a long time. Moreover, he is a thoroughgoing democrat—and the United States was and is in need of democratic control under whatever party label it comes.

But the question has come up in many people's minds as to the kind of democrat which the President is. Thomas Jefferson was something of a sentimental democrat. He saw liberty, equality, and fraternity in such a reassuring aspect that he was in favor of practically abolishing the Navy. He could express the aspirations of the country better than could any man of his time. Grover Cleveland, on the other hand, was a fighting democrat. He didn't manage Congress very well, but he neither post-

poned nor compromised any important issue, domestic or foreign.

The President is more a Jeffersonian democrat than he is a Cleveland democrat. He has done many things which Mr. Cleveland would not have done, and has left undone many things which Mr. Cleveland would have done. He has purified our politics of many an old abuse and made large strides in the direction of equal opportunity for all, and at the same time he has made us somewhat sentimental and timid and taken from us the touch of vigorous belief and action on the great principles to which this country is dedicated. The President's great abilities are his own. He leans less on able advisers than do most great men. He has not had many strong men around him, and this has been held much against him. Yet, without help he has accomplished much that other men with all possible help could not accomplish.

This year we have an election chiefly on the issue of Woodrow Wilson, and it shows whether the people of the United States want an able democrat of the Jeffersonian type as President for four years more. The prosperity of the country makes the test a very fair one.



PROF. CHARLES H. HERTY

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PRESIDENT OF THE AMERICAN CHEMICAL SOCIETY, TO WHOM MAY BE ATTRIBUTED MUCH OF THE SUCCESS OF THE RECENT NATIONAL EXPOSITION OF CHEMICAL INDUSTRIES HELD IN NEW YORK, AT WHICH THE MOST STRIDES TAKEN IN AMERICAN CHEMISTRY SINCE THE WAR BEGAN WERE STRIKINGLY SHOWN



"O HENRY"

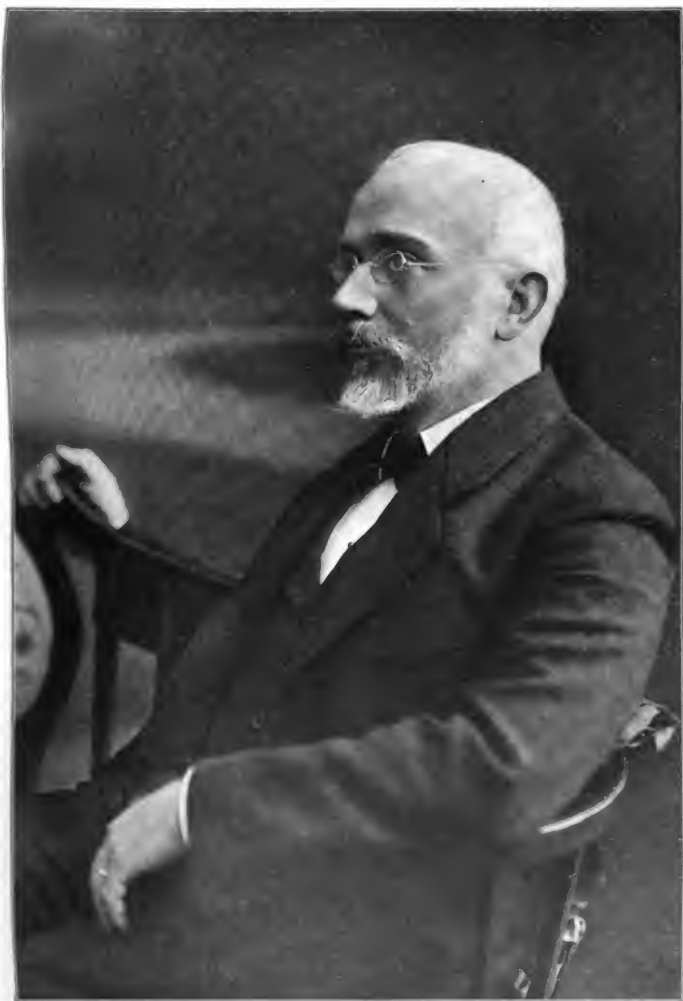
AN UNUSUAL PORTRAIT OF THE LATE SYDNEY PORTER, THE FIRST COMPREHENSIVE BIOGRAPHY OF WHOM, BY PROF. C. ALPHONSO SMITH, OF THE UNIVERSITY OF VIRGINIA, HAS JUST BEEN PUBLISHED

[See page 54]



MR. ELIOT WADSWORTH

TO WHOM, AS RECENTLY APPOINTED VICE-CHAIRMAN OF THE CENTRAL COMMITTEE OF THE AMERICAN RED CROSS SOCIETY, FALLS THE TASK OF BRINGING UP THAT ORGANIZATION TO THE HIGHEST POSSIBLE STANDARDS OF EFFICIENCY



Courtesy of The Atlantis

ELEUTHERIOS VENIZELOS

WHO, AFTER TWO YEARS' VAIN ENDEAVOR TO MAKE GREECE CAST HER LOT WITH THE ENTENTE ALLIES, PLACED HIMSELF RECENTLY AT THE HEAD OF THE INSURGENT MOVEMENT TO FORCE KING CONSTANTINE TO ENTER THE WAR ON THE SIDE OF THE ALLIES [See page 92]



AMERICANS FLYING FOR FRANCE

Left to right: the late Sergeant Victor Chapman of New York, Sergeant Eliot Cowdin of New York, Sergeant Bert Hall of Texas, Lieutenant William Thaw of Pittsburg, Captain Thenault of France, Lieutenant de Laage de Mieux of France, Sergeant Norman Prince of Boston, the late Sergeant Kiffin Rockwell of Atlanta, Ga., and Sergeant James McConnell of Carthage, N. C. Lower left: Sergeant Victor Chapman, killed over Verdun last June. Lower right: Sergeant James McConnell, who writes of the American Escadrille in this number of the *WORLD'S WORK*

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RECENT EXPERIMENTS WITH
THE PRIMARY

THE direct primary, hailed several years ago as the solution of all our political problems, has had several tests in the last few months. Among other things, it contributed greatly to the nomination of Mr. Hughes. The large primary votes scored by the Supreme Court Justice in certain state primary elections, notably that in Oregon, opened wide the eyes of the political leaders to his value as a candidate. Similarly the failure of Mr. Roosevelt at the primaries gave the final blow to his Presidential prospects. Mr. Henry Ford's success in Michigan and Nebraska did not arouse general enthusiasm for the Presidential primary; and more recent state experiences have disappointed many others. Republicans in New York clearly chose the weakest Senatorial candidate, and the Democrats of New Jersey again expressed their preference for Mr. James E. Martine, who for six years has been an anachronism in the United States Senate. The Albany County primaries revived the boss-ship of Mr. William Barnes, Jr., whose political obituary the newspapers had recently published; on the other hand other living bosses, in the same state, went down under a shower of primary ballots.

What does all this indicate? That the primary is a failure? A menace to our democracy? Not necessarily. This means of selecting candidates was widely adopted as a means of freeing the people from aggravated political evils. The convention gave unlimited opportunities for political manipulation; fleeing from this, the people greatly exaggerated the advantages of their substitute. The primary has not fulfilled these expectations; it has constantly chosen unworthy representatives, precisely as the convention did. In all probability it selects more good men than the old system provided; it certainly does not give us fewer. Mr. Calder and Mr. McCombs, Republican and Democratic Senatorial nominees in New York State, are not ideal candidates; we need only go back a few years, however, to discover New York Senators who were

much worse. Certainly Mr. Hughes, the Republican favorite in Presidential primaries, compares favorably with most Republican Presidential candidates for the last thirty years. The recent primaries probably fairly represent the American democracy in all its vices and its virtues, all its tendencies to blunder and to go straight. Whatever the outcome, the country might as well adjust itself to the new order, for it has come to stay. Already the primary has refuted one prophecy; for the people are turning out in greater numbers every year. Nearly half the enrolled Republicans in New York went to the polls this fall; in New Jersey, in certain sections, 70 and 80 per cent. participated in this party election. In certain Western states as many as 90 per cent. voted on primary day. The people must learn to use this as well as other instruments of democracy; and, in their slow, blundering, democratic fashion, must learn largely by their own mistakes.

YALE'S TWO HUNDREDTH
ANNIVERSARY

EVERYTHING in this country is so new that we all feel a certain satisfaction in the fact that there are perhaps half a dozen colleges that are considerably older than the Nation itself. That Yale University can celebrate a two hundredth anniversary in itself is a splendid distinction. And this bicentennial does not mark the date when it was established. Fifteen years ago, in 1901, Yale celebrated her two hundredth birthday. This October she has celebrated the second century of her existence at New Haven. Founded at Saybrook in 1701, the "collegiate schoole" moved to its present location in New Haven in 1716.

The Pageant in the Yale Bowl, which was part of this commemoration, pictured the changes that have taken place in two hundred years. These changes concern not only education and its ideals, but the Nation itself. It sufficiently indicates national progress to recall that the chief reason we have Yale University is that, two hundred years ago, the journey from New Haven to Cambridge, when Harvard

was then in its infancy, was so long and perilous! Yale also symbolizes the amazing spiritual and social changes that have taken place in the American commonwealth. Though she is the institution which, above others, prides herself upon her democracy, life in the old New Haven colony was not democratic at all. For nearly a hundred years the students' names, in the college catalogue, appeared in the order of the social prominence of their families. The early Yale charters also disclose the theocratic character of the New Haven settlement. The college was really founded as an essential formative influence of a Christian community. Its purpose was to train the socially elect "for employment both in church and civil state"—church, be it observed, being placed first. A strict Calvinism was exacted of all instructors; an early president was dismissed because he was suspected of leaning toward Episcopacy. The only existing traces of this attitude are the number of clergymen still on the corporation and the fact that the undergraduates still have to attend daily morning prayers. Yale has held more tenaciously than Harvard to traditional scholasticism; no man enters the Freshman class without a large amount of Latin—though Greek has recently been dispensed with—and for the first two years the studies are still largely prescribed.

According to President Charles F. Thwing, of Western Reserve University, Yale, of all the colonial colleges, has contributed the most "men filling the highest political and judicial offices" in our country. An institution that has had on its teaching force men like Whitney, Dana, Gibbs, the two Hadleys, Marsh, Sumner—to mention only a few—certainly has done great things for American scholarship. "Before the work of Professor Marsh," said Huxley, after inspecting his paleontological collections at Yale University, "evolution was merely a theory—since, it has become a fact."

Yale has indeed much to celebrate; her two hundred years at New Haven have added to the virility and culture of the Nation; the best wishes of all certainly go out to her.

SHOULD WE HELP END THE WAR?

MR. H. G. WELLS, the English author, voiced a common belief in England when he prophesied that Germany would soon make an effort to use the United States as the machinery with which to stop the war.

A few days after Mr. Wells's prophecy was printed the German Prince Hohenlohe published a statement which was passed by the Berlin censor in which he said that it had become evident that it was impossible to achieve "the fantastic" aims of the belligerents and that as further bloodshed could accomplish nothing it should be stopped and that the United States should use its influence and exert pressure if need be to bring the Entente Allies to this point of view. About the same time it was pointed out in Austria that Austria had no Ambassador here and that this omission was particularly unfortunate because if the United States should use its endeavors to stop the war Austria ought not to be unrepresented at Washington.

Germany entered the war with the intention, to use a Wall Street phrase, of gaining control of Europe. After two years her directors see that the grand project cannot be accomplished. They wish, therefore, to stop the struggle before it costs them any more. They would like to keep what they have acquired in the struggle or to trade it for some properties lost and otherwise go back to the former relations with their neighbors. This is the plan for which they want the "moral" support of the American people.

On the other hand the Entente Allies do not want to go back to the basis of things as they existed before the war. Before the war Germany was preparing to gain her overlordship of Europe. Having tried to put this scheme into effect and failed, she wishes to stop the war now and leave herself well paid for her effort by her conquests and in a position to make better preparations to dispose of one or more of her neighbors later.

The neighbors naturally do not look upon this plan with favor. They feel that although they were not able to keep the Kaiser from making war when he thought

it wise they can at least prevent his making peace when convenient, and that if they do this perhaps he or the German people may realize that making war even if you are all ready for it is a risky, dangerous, and unprofitable venture. As Mr. Lloyd-George, the British Minister of Munitions, said:

"The whole world, including neutrals of the highest purposes and humanitarians with the best motives, must know that there can be no outside interference at this stage. Britain asked no intervention when she was not prepared to fight. She will tolerate none now that she is prepared until Prussian military despotism is broken beyond repair."

If we are really neutral in spirit—that is, if we do not care which side wins—if we have no interest in the struggle and see no moral principle involved, there is no reason why the German idea that we might join them to stop the war should not appeal to us. That would put the stamp of our approval upon starting a war of conquest, the violation of Belgium's neutrality, the "scrap of paper" theory of keeping treaties, the murder of our own women and children at sea, and barbarous methods of warfare generally.

But, of course, the fact is that the American people are not now and never have been neutral. They do not accept the Germans' belief that they had a moral right to start a world war to see if they could not thereby gain world domination. They do not accept the German idea that anything which they do to anybody to gain that end is justifiable. They do not accept the idea that the spread of Prussian autocratic ideals, if they may be termed such, is what the world needs for its salvation. They do not, therefore, have a sympathetic understanding for the German hint that the United States should help Germany get out of the difficult situation into which her rulers have gotten her.

The President in his speech of acceptance said, speaking of the future:

"No nation can any longer remain neutral as against any wilful disturbance of the peace of the world."

The principle is as applicable to this war as to any in the future, for most Americans are convinced that Austria and Germany did wilfully disturb the peace.

And there is another principle that might well go with this one:

"That the United States cannot regard with indifference a struggle in which democracy and free government is threatened by autocracy."

The Hungarian Premier, in his speech concerning the possibility of our mediation on the war, said that the ruthless U-boat warfare is not prosecuted out of respect to the opinions of the United States. How much more damage the U-boats could do than they are now doing it is hard to tell, but certainly if they wish to they can sink some ships with American passengers on board. There is, of course, a party in Germany that continues to clamor for the renewal of the submarine campaign without limitations. So long as there is hope that we may be useful to Germany in her efforts to stop the war, the lives of Americans will probably be spared. When it becomes apparent that we shall render no aid we have no assurance that the submarine atrocities will not begin again.

The German Government has never made any kind of reparation for the killing of the Americans who were on the *Lusitania*, or those on the *Arabic*, or even those on the *Sussex*. We have been notified that German submarine commanders were given orders not to sink vessels without warning, but we were given no assurances that this order would remain in force. It may or it may not. Whether it does or not it is not an atonement for the dead of the *Lusitania*, the *Arabic*, the *Persia*, the *Ancona*, and the *Sussex*.

If we are solicitous about American lives we cannot well forget the dead. If we constitute ourselves the guardian of the freedom of the sea we cannot accept a revocable and contingent German Admiralty order as the basis of our safety of travel at sea.

These things are still unsettled.

ANOTHER "EMS MESSAGE"

D R. E. J. DILLON is one of the few journalist-students of international affairs who, like the late M. de Blowitz, are in a position to know more of the inside of the chancelleries of

Europe than most others. His book, "Ourselves and Germany," written, of course, for his English compatriots, contains many significant and interesting facts and analyses of the origins of the Great War and the characters involved. Despite the vast amount of writing on this subject, most of which has dealt with the more or less well known fact, Dr. Dillon's book carries one through new channels of information. One of the most startling chapters is devoted in part to the following account of a Machiavellian trick which deserves to rank in history with the doctoring of the Ems telegram, the dishonest device by which Bismarck boasted he precipitated the Franco-Prussian War:

"Among the privileges accorded to the *Lokal-Anzeiger* from the date of its purchase for the behoof of the Crown Prince onward was that of publishing official military news before all other papers, and not later even than the *Militär-Wochenblatt*. Consequently, it thus became the most trustworthy source of military news in the Empire. This fact is worth bearing in mind, for the sake of the light which it diffuses on what follows.

"War being foreseen and arranged for, much careful thought was bestowed on the staging of the last act of the diplomatic drama in such a way as to create abroad an impression favorable to Germany. The scheme finally hit upon was simple. Russia was to be confronted with a dilemma which would force her into an attitude that would stir misgivings even in her friends and drive a wedge between her and her ally or else would involve her complete withdrawal from the Balkans. . . .

"Congruously with this plan, Russia was from the very outset declared to be the Power on which alone depended the outcome of the crisis. . . .

"The date fixed for the German mobilization was July 31st. The evidence for this is to be found in the date printed on the official order which was posted up in the streets of Berlin, but was crossed out and replaced by the words "1st of August," in writing, as there was no time to reprint the text. It had been expected in Berlin that Russia would have taken a decision by 30th, either mobilizing or knuckling

down. Neither course, however, had been adopted. Thereupon Germany became nervous and went to work in the following way:

"On Thursday, July 30th, at 2:25 P. M., a number of newspaper boys appeared in the streets of Berlin adjoining the Unter den Linden and called out lustily: '*Lokal-Anzeiger* Supplement. Grave news. Mobilization ordered throughout the Empire.' Windows were thrown wide open and stentorian voices called for the Supplement. The boys were surrounded by eager groups, who bought up the stock of papers and then eagerly discussed the event that was about to change and probably to end the lives of many of the readers. It does not appear that the Supplement was sold anywhere outside that circumscribed district. Now in that part of the town was situated Wolff's Press Bureau, where the official representatives of Havas and the Russian Telegraphic Agency sat and worked.

"The correspondent of the latter agency having read the announcement of the *Lokal-Anzeiger*, which was definitive and admitted of no doubt, at once telephoned the news to his Ambassador, M. Zverbeieff. During the conversation that ensued the correspondent was requested by the officials of the telephone to speak in German, not in Russian. This was an unusual procedure. The Ambassador could hardly credit the tidings, so utterly were they at variance with the information which he possessed. He requested the correspondent to repeat the contents of the announcement, and then inquired: 'Can I, in your opinion, telegraph it to the Foreign Office?' The answer being an emphatic affirmative, the Ambassador despatched a message in cipher to this effect to the Russian Minister of Foreign Affairs. For there could be no doubt about the accuracy of information thus deliberately given to the public by the journal which possessed a monopoly of military news and was the organ of the Crown Prince. The Russian correspondent also forwarded a telegram to the Telegraphic Agency in Petrograd communicating the fateful tidings.

"Within half an hour the German Ministry of Foreign Affairs telephoned to

Wolff's Bureau to the effect that the report about the mobilization order was not in harmony with fact, and it also summoned the *Lokal-Anzeiger* to issue a contradiction of the news on its own account. This was duly done, and so rapidly that the second Supplement was issued at about 3 p. m. The explanation given by the newspaper staff was that they were expecting an order for general mobilization and had prepared a special Supplement announcing it. This Supplement was unfortunately left where the vendors saw it, and, thinking that it was meant for circulation, seized on all the copies they could find, rushed into the streets, and sold them. On many grounds, however, this account is unsatisfactory. Copies of a newspaper supplement containing such momentous news are not usually left where they can be found, removed, and sold by mere street vendors. Moreover, the date, July 30th, was printed on the Supplement, so that it was evidently meant to be issued, as a matter of fact it was circulated only in a very limited number of copies and in the streets around Wolff's Bureau, where it was certain to produce the desired effect.

"Half an hour later the correspondent of the Russian Agency received a request to call at the General Telegraph Office at once. On his arrival he was asked to withdraw his two telegrams which the Censor refused to transmit. To his plea that so far as he knew there was no censorship in Germany he received the reply that it had just been instituted and now declined to pass his telegrams. 'In that case,' he said, 'my consent is of no importance, seeing that the matter is already decided.' Finally, he asked to have his messages returned to him, but they would consent only to his reading, not to his retaining them.

"The Russian Ambassador also despatched an urgent *message en clair* to his Government embodying the contradiction communicated by the Wilhelmstrasse.

"Now, the significant circumstance is that the Ambassador's first telegram stating that general mobilization had been officially ordered throughout the German Empire was forwarded with speed and accuracy and reached the Russian Foreign Minister without delay. And this news was communicated to the Tsar, who by way of

counter-measure issued the order to mobilize the forces of the Russian Empire. But the Ambassador's second telegram was held back several hours and did not reach its destination until the mischief was irremediable. That curious incident is of a piece with the Bismarck's Ems telegram.

"It is by such devices that the German Government is wont to launch into war. The mentality whence they spring cannot be discarded in a year or a generation, nor will any Peace Treaty, however ingeniously worded, prevent recourse being had to them in the future. For this, among other reasons, more trustworthy guarantees than scraps of paper must be sought and found."

MR. ROBERT BACON'S TEST OF AMERICANISM

MR. ROBERT BACON, a pleasant and handsome gentleman, formerly a partner in J. P. Morgan & Co. and at one time Ambassador to France, ran for the Republican nomination for the Senate from New York. None of his qualifications were calculated to give him any particular political strength. Moreover, he had no hold on the regular Republican machine and had little or no machine of his own. There was every chance, therefore, that he would be overwhelmingly defeated.

Mr. Bacon's platform was that he was not neutral but believed that the Allies were fighting for principles in which we were vitally interested, and, secondly, that he believed in universal service for the United States.

He received 142,445 votes to 151,379 for Mr. Calder, his opponent, who had every possible political advantage.

There is a very strong indication in this vote that the voting public has more courage in realizing the real significance of the world war than most of our politicians credit them with. If our political leaders would think oftener a little more highly of the intelligence of "the average voter" the chances are very good that he would justify it. Mr. Bacon's experiment in New York, though not successful, was certainly significant, and showed that many of the voters had the courage of their convictions.

WHAT KILLS THE BABIES?

HERE are two and a half million babies born in the United States every year, of whom 300,000 die before they have reached their second birthday. High scientific authorities declare that, under proper surroundings, the death rate of babies would be practically negligible. These figures, therefore, constitute a standing reproach to American civilization.

What kills the babies? The doctors have no difficulty in answering this question. They can present a lengthy column of statistics, bristling with all manner of unpleasant diseases. But this hardly answers the question. The fundamental point is: Why do 12 per cent. of all the babies born contract these diseases, and why do the remaining 88 per cent. escape? Miss Julia Lathrop, head of the Children's Bureau at Washington, has spent the last few years attempting to solve this problem. Fundamentally, she believes, infant mortality is not a medical phenomenon, but is one more closely related to civic and social surroundings. She has taken a typical industrial community, Johnstown, Pa., and has had personal interviews with the 9,000 women who had babies during a particular calendar year. The purpose was to discover the environmental conditions of the children who died and of the children who survived.

The old-fashioned philosophy which teaches that the pampered child stands the smallest chance in the struggle for existence and that the more toughened offspring of the poor develops qualities that make for better success receives a hard knock from this investigation. Johnstown is a mining town and is also the headquarters of many steel mills. Here the workingmen are strong and healthy, probably as free from the social vices as the average American workingmen. The mothers, as a rule, do not work in the factories, though many of them have unusually heavy domestic duties, as the practice of keeping lodgers and boarders is widespread. Infant mortality in Johnstown exceeds only slightly that of the country as a whole—it is about 13 per cent. as against our general rule of 12

per cent. But it varies in accordance with living conditions. Where income reaches the lowest ebb, and where housing and the American standard of living least prevail, the infant death rate, in the first year of life, reaches 27 per cent. In the wards where the highest standards prevail it drops to 5 per cent. Thus only one baby in twenty died in the prosperous sections, while one in four succumbed in those sections where life existed on its lowest economic plane.

What shall we do about this? The Children's Bureau was established both to find the causes affecting favorably or unfavorably child life and to suggest means for improvement. Evidently it has made progress in its diagnostic work. The remedies will present greater difficulties—though the improvement that has taken place in social conditions in the last quarter of a century show that there is really no cause for absolute despair.

OUR ARMY'S VICTORY OVER DISEASE

IN ONE respect at least the mobilization of our troops on the border has been a great success. Its freedom from disease forms a delightful contrast to previous American experiences at warfare. Our militia has been quartered on the border now for four months—a period longer than the Spanish-American War. It has lived mostly in an unhealthy country, under climatic conditions easily provocative of epidemics. These were the conditions which, in 1898, produced the epidemics of typhoid, dysentery, and other tropical diseases that caused nearly all the mortality of the Spanish War. But no such calamities have disgraced this campaign. Major-General Pershing's force and the militia have won no brilliant military victories, but they have vanquished the enemies that have hitherto proved most formidable in warfare. And this is peculiarly an American triumph. Our Army on the Mexican front was the first to demonstrate on a large scale the value of anti-typhoid vaccination. Our surgeons began applying this treatment on a wholesale system when President Taft

first stationed troops on the border. It was this success which led to the use of typhoid vaccine in the European armies—with amazing success.

The Administration should carry these reforms further. The soldiers returning from the Spanish War received what were believed to be sound physical examinations. The great majority came back to private life armed with certificates of sound health. The Government made these examinations for the purpose of protecting itself against fraudulent claims for disability pensions. The precaution has not had quite that result, largely owing, perhaps, to the fact that the examinations were not thoroughly made. We should learn our lesson and give every returning soldier from the Mexican border a physical examination of the most modern kind. The Government should have records showing precisely his physical condition, both for the protection of the militiaman himself and as a protection against improper pension claims.

WHAT MAKES US GROW OLD?

WHAT is the real cause of senility and decay? Bacterial toxins generated in the intestines, say some; overwork, overwrought nerves, nervous excitement, constant worries—other causes like these are urged. An examination into longevity recently made by the London *Lancet* rather disposes of the idea that an energetic life in itself leads to early death. The *Lancet* writer has studied our American Presidents, assuming that they may be taken as types of men who have lived strenuous lives, full of excitement and hard work. Most of them lived to a good old age. Here are their ages: 67, 90, 83, 85, 73, 80, 78, 79, 68, 71, 53, 65, 74, 64, 77, 56, 66, 63, 70, 49, 56, 71, 67, 71, 58. Three it is true, died comparatively young; Lincoln, at 56, Garfield at 49, and McKinley at 58—but these men were assassinated. With these exceptions, the only Presidents who died under sixty were Polk, at 53, and Arthur, at 56. The average age of Presidents is 70—the Biblical three-score-and-ten. John Adams, dying at 90, Jefferson at 83, Madison at 85, and John Quincy Adams at 80, to say nothing of their ripe

successors, clearly indicate that politics in itself does not lead to premature decay. The fact that, in 127 years, only two Presidents, except those assassinated, have died in office—the first Harrison and the second Taylor—is a record that sets at defiance the law of probabilities.

Hard work in itself is clearly the normal state and seldom kills.

A BEAUTIFUL INCIDENT OF THE WAR

A BOY from Hallowell, Me., a mere lad who had not attained his majority—was Captain Frank E. Goodrich of the Royal Flying Corps, whose death in action on the Somme front was announced by the British War Office on September 15th. Wounded at St. Julien, and incapacitated as a soldier, he entered the British air service and in six months earned two promotions and the Military Cross. Just a month before he died he wrote a letter to his mother from which the following paragraph is taken:

You wanted to know how Immelmann [the most famous of the German aviators] was finally brought down. He tried his old game of diving on one of our machines while it was being engaged by several others. Unfortunately for Immelmann another of our machines was behind, watching for just such a move. Before he could get away he was shot down and killed. We were sorry to learn that he had been killed for we had hoped to bring him down alive on our side and make him prisoner, for we all admired his ability as a pilot and no doubt he was as chivalrous as a Hun can be. I had the honor to drop a wreath for him from the members of our squadron. We subscribed for it, attached a card inscribed, "To Lieut. Immelmann, a brave and able opponent, from the R. F. C.," and I took it over one afternoon and dropped it by parachute on one of the airdromes. They shelled me all the way over and back but did no damage. It was acknowledged later in the German papers. Several other squadrons also dropped wreaths.

The incident is a reminder that the German who brought down Adolphe Pegoud, the great French aviator, in September, 1915, similarly bedecked the grave of his adversary; and it is a fine evidence that war still often arouses the nobler emotions of chivalry and compassion.

THE KIND OF BONDS 'THE BRITISH BUY

Every month the WORLD'S WORK publishes in this part of the magazine an article on experiences with investments and lessons to be drawn therefrom.

A FEW years ago, a London firm of investment bankers undertook the task of ascertaining the precise requirements of the English investing public. For this purpose it prepared a question-and-answer paper which it sent out to several thousands of its correspondents, representing investors of every kind.

The questions were four in number, calculated to reveal as clearly as possible the aims and tastes of each investor who should take the pains to answer them. The first question had regard to the safety of principal; the second to the rate of income; the third to the possibility or probability of increase in value; and the fourth to the different classes of securities.

A large majority of the people to whom these questions were addressed furnished replies which were tabulated by the bankers, and afterward summarized in one of the English financial magazines as follows:

(1) The question of capital safety was of primary importance.

(2) They were satisfied with only a moderate rate of income, provided their capital was safe.

(3) Practically none were willing to incur the slightest risk, however likely their capital was to increase in value.

(4) They had no particular preference for any particular class of investment, or country. There were, of course, those who objected on religious grounds or through personal prejudice to certain stocks [this word in England often means "bonds"] but this was entirely unconnected with the actual question of investment. For example, some people objected to investments connected with the manufacture and sale of alcoholic beverages, places of amusement, and so on.

(5) There were some, but quite an insignificant number, who regarded investment as a short cut to fortune.

The returns showed also that in a surprisingly large number of cases securities

yielding above $4\frac{1}{2}$ per cent. were regarded as unsafe, and would not, for that reason, be entertained.

This composite picture of the mind of the British investor of, say, ten years ago, is especially interesting now. For it goes far to explain how it happened that, as part collateral for the \$250,000,000 two-year 5 per cent. loan negotiated in this country a little while ago, the British Government was able to offer such an extraordinary array of American stocks and bonds.

The statistics of these American securities, representing one third of the total collateral pledged for the loan, are instructive. There are more than five hundred separate issues, having an aggregate market value of \$100,000,000. The bonds number 442, of which 323 are railroad issues, 84 public utility, 27 industrial and miscellaneous, and 8 municipal—the latter those of New York City. The stocks number 61, of which 37 are railroad issues, 20 industrial, and 4 public utility.

The list of stocks is, fortunately, not too long to be included here as illustrating the shrewd discrimination of the kind of investors who have been taught by long experience how to minimize the risks that are inherent in corporation shares as a class. It comprises Atchison, Topeka & Santa Fe preferred, Atlantic Coast Line common, Baltimore & Ohio common and preferred, Chicago & North Western common and preferred, Chicago, Milwaukee & St. Paul common and preferred, Cleveland & Pittsburg guaranteed stock, Detroit, Hillsdale & South Western, Erie & Pittsburg, Erie Railroad first preferred, Great Northern preferred, Illinois Central, Illinois Central Leased Lines stock, Lehigh Valley, Louisville & Nashville, Minneapolis, St. Paul & Sault Ste. Marie common and preferred and Leased Lines stock, Manhattan Railway, Mobile & Birming-

ham preferred, Morris & Essex common, New York Central, Norfolk & Western common and preferred, Northern Pacific, Pennsylvania Railroad, Pittsburg, Ft. Wayne & Chicago original and special guaranteed stock, Reading first and second preferred, St. Louis Bridge first preferred, Southern Pacific, Tunnel Railroad of St. Louis, Union Pacific common and preferred, American Locomotive preferred, American Car & Foundry preferred, American Sugar Refining common and preferred, American Cotton Oil common, American Tobacco preferred, American Smelters Securities preferred B, Baldwin Locomotive preferred, Cluett, Peabody & Company preferred, Central Leather preferred, Deere & Company preferred, Eastman Kodak preferred, International Harvester Corporation preferred, Ingersoll Rand preferred, Lehigh Coal & Navigation, Liggett & Myers preferred, P. Lorillard & Company preferred, Montgomery, Ward & Company preferred, United Fruit, Western Union Telegraph, Cities Service preferred, Consolidated Gas, Electric Light & Power of Baltimore common and preferred, and Consolidated Gas of New York.

This list is less noteworthy for the inclusion of the single essentially speculative issue of Erie shares than for the predominance of preferred and guaranteed issues of widely recognized investment merit, many of them in the railroad class so well established that they yield consistently under 5 per cent.

But the perseverance of the British investor is best exemplified by the list of railroad bonds. It is possible in this article, on account of the large number of items in the list, to refer only in a general way to some of its more striking aspects. Among these is that of the faithfulness with which the old investment principle of "keeping close to the rails" was adhered to in the choice of the bonds. They are, for the most part, first mortgage and divisional issues—the real "underlying" kind of which the roads themselves have few left to supply the present-day investment market. Their variety, moreover, in respect to the lines they cover is amazing.

Nor do the lists of industrial and public

utility bonds hypothecated show any less discriminating tastes on the part of their individual owners in these departments of the American investment market. It would, indeed, be necessary to make precious few eliminations from either of these two lists to enable one to say: "These bonds are as fairly representative of the select investments of their class as any that might be named."

Thus have the extremities of the British Government, in providing means to meet the financial obligations it has been piling up in this country since the outbreak of the war, furnished an interesting and important lesson for the American investor.

The average buyer of securities finds himself confronted with one or more of three fundamental questions: What are the best to hold? What are the best for profit? What are the best for emergency?

It is to the last of these questions in particular that a study of the collateral back of the \$250,000,000 British loan supplies an illuminating answer. These securities were discovered in the private strong boxes of that great middle class of British investors who are accustomed to buy with the intention of leaving their holdings undisturbed from one generation to another, but always with an eye to the unexpected and with a keen sense of appreciation of the fact that there is no single "best security" for one to depend upon. They were picked with painstaking care for their usefulness in meeting a supreme financial emergency, and "mobilized" by the British Treasury through the levy of a special income tax upon such of their holders as should refuse to sell or lend them to the Government.

If, as has been frequently suggested, Great Britain, so long the world's greatest creditor nation, did not escape the pangs of humiliation in facing the necessity of pawning its privately owned investments to get financial aid abroad, it must, nevertheless, have experienced some compensating sense of pride in exposing a list of assets of such admirable quality.

There are few investors of any class who could not profit by taking the pains to acquaint themselves with the individualities of these securities.

SHALL WE ADOPT UNIVERSAL MILITARY SERVICE?

WHAT SORT OF NAVY AND ARMY DO WE NEED?

THE GRAVE BUT INEVITABLE CONCLUSION THAT THE UNITED STATES MUST ABANDON
ITS TRADITIONAL POLICY OF ISOLATION AND BUILD AN EFFECTIVE DEMO-
CRATIC ARMY AND A POWERFUL NAVY TO INSURE ITSELF
AGAINST INVASION AND TO DO ITS DUTY IN THE WORLD

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THERE is endless talk in these days about "preparedness." Both political parties and both candidates for the Presidency advocate a larger Navy and a larger Army. On preparedness and Americanism the Republican platform uses the braver words; but the Democratic Party has voted—with more or less reluctance—the largest appropriations for the Navy and Army that have ever been voted, and also made the most earnest attempt ever made to convert the state militias into a national force. As to the defunct Progressive Party and its leaders, it shouted louder than either of the others for warlike preparation, and, indeed, appeared to advocate war against piteous little Mexico; but its principal doctrines related to social and industrial improvements at home, and it has had no chance to put those doctrines into practice through legislation. Under these political conditions at home and in the present fearful state of Europe, it is important that the American people, and particularly the public men who undertake to lead the people, should consider, first, for what uses the United States needs a navy and an army; and secondly, the sort of navy and army which the United States should prepare.

To undertake the maintenance of a great modern navy and a great modern army, always prepared for immediate action, involves the abandonment of a deeply rooted American policy—the ancient reliance for safety on the physical isolation of the

country between two great oceans. The maintenance of a larger navy will not require much new legislation, or much change of customs; but the maintenance of a great land force which can be mobilized in a few days—all ready for service in the field—will require much new legislation, great new expenditures, and many changes in the habits and customs of the people. The policy of maintaining only a small professional army, and even that imperfectly equipped, will have to be abandoned.

Why should the American people make this formidable change in their national habits and their international policy? First, because the industrial and commercial interests of the Nation have completely changed since the Civil War, and can no longer be preserved and promoted in isolation. The country cannot keep its existing machinery running, or sell its surplus foods and raw materials, unless the foreign markets are open to it, and are freely developed. The United States, having become an industrial and commercial World Power, needs to have all the seas and oceans of the world open for its foreign trade in times of peace, and so far as is practicable in times of war also—open for both its imports and its exports of foods, drinks, drugs, raw materials, and manufactured articles.

So long as the British navy ruled the seas, freedom for American trade with all nations was secure in peaceful times, and with Great Britain and her allies in war times; but the war has demonstrated that

Great Britain can no longer secure the freedom of the seas for herself and other nations without assistance. During the present war the combined navies of Great Britain, France, Italy, and Russia have not succeeded in maintaining an effectual blockade of all German, Austrian, Bulgarian, and Turkish ports, or in preventing the destruction of an immense tonnage of merchantmen belonging to the Entente Allies, with their cargoes. Although many German and Austrian submarines have been destroyed, and a few short lines of transportation by water have been made safe against submarines, it cannot be said to-day that adequate means of defending commercial vessels and fishermen against destruction by hostile submarines have been discovered, or that the full power of the submarine to destroy enemies' property, or to maintain some foreign commerce in spite of a blockade, has as yet been developed and exhibited. The world still has much to learn about the functions of the submarine. Hence it follows that the task of keeping the oceans safe for the commerce of the free, manufacturing nations—to which foreign commerce is indispensable—is one in which the United States may reasonably be expected to take its fair part. It is not doing so now. If the United States expects to share the benefits of the resistance the Entente Allies are making to the domination of seas and lands by Germany, should it not also prepare to share the terrible sacrifices that resistance costs?

AMERICA NO LONGER PHYSICALLY ISOLATED

Secondly, steam and electricity have done away with the physical isolation of the United States. The oceans are not barriers, but highways which invite the passage of fleets, pacific or hostile. The security of America can no longer be trusted to the width of the Atlantic and the Pacific.

If any one says that the risk of an invasion of the United States by a strong naval and military Power is very small, particularly within twenty years of the close of the present terrifying and exhausting war, the answer is that, since the war in Europe has demonstrated how horrible a catastrophe an invasion would

be, the American people may wisely insure themselves against even a small risk of invasion. The only available insurance is a Navy powerful in every respect, and an Army in reserve visibly strong in numbers and visibly prepared for immediate service.

IF WE HAD UNIVERSAL SERVICE

If the principle of universal military service should be accepted and acted on in the United States, several important consequences would immediately follow:

1. The country would always have on call a trained force for all the duties and services which the Regular Army now performs, and this force could be increased by telegraph and telephone to any desired extent up to the limit of the reserves. Within ten years these reserves would be formidable in number. It would probably be desirable to maintain a special force for a service of two years in the Philippines, the Panama Zone, and other outlying regions; but this force should consist of young men who volunteered for that special service after they had received the universal training at home, or the better part of it.

2. It would no longer be necessary to maintain any state militia; provided the governors were authorized to call on the national War Department for any troops they might need for local service. But if any state preferred to do so, it might maintain a local volunteer force made up of young men who had already served their first period (sixty to ninety days) in the national army.

3. The Nation would be always prepared for defensive combat with any military Power which might assail it for purposes of conquest or ransom; and, being prepared, would probably be safe from such attempts.

4. In case of rebellion or outbreak of any sort within the country itself, a national force could be promptly put into the field to subdue it.

5. All the able-bodied young men in the country would receive a training in the hard work of a soldier which would be of some service to them in any industry in which they might afterward engage. They would have become accustomed to a discipline under which many men cooperate

strenuously in the pursuit of common objects. They would have mastered the use of some instruments of precision; and would have learned much about personal and public hygiene, and the means of preserving bodily vigor and utilizing it to advantage.

6. The defense of the country would be always in charge of a Navy and Army neither feudal nor mercenary, neither drafted "for the war" nor professional in the sense that its members mean to spend their active lives in the service, but on the contrary composed of all the able-bodied youth of the Nation, acting under a universal sense of obligation or duty, but also willing to serve the country in a hearty co-operative spirit out of love of freedom, justice, and all that makes "home."

7. In case of war, large or small, long or short, the great waste of lives and money which has taken place at the beginning of every war in which the United States has been engaged since the Government was organized would be avoided; because the country would have at call any desired number of competent officers and well-trained men. In case of war alarms the country would not be obliged to summon untrained militia, or to resort to such crude and unsound methods as Plattsburg camps and college regiments.

MORAL ADVANTAGES OF STRENGTH

Some moral advantages would result to the United States from maintaining the second navy in the world and a numerous army always ready. A strong democracy, always prepared to defend itself against attacks from without or within, would be less exposed to intentional provocation by critical or jealous governments, and less liable to the occasional internal panics which are apt to cause wastes and other unnecessary evils. Some improvement in the character and efficiency of the American people itself might also be expected, especially in regard to coöperative discipline, self-reliance, and self-control. To be always ready to defend and to maintain American ideals of public justice and liberty would add to the self-respect of the people. If every able-bodied youth were well trained for service in the national army or

navy at some serious sacrifice of his ease and earning time, and then held himself constantly in readiness to fight for his country, if it were in peril, until he became too old for soldier's work, the whole people would soon attain to a new sentiment of patriotic duty and self-sacrificing devotion to the country as the groundwork of home, kinship, and friendship, and the representative of public justice and liberty and of progressive hope for mankind. The entire Nation, without distinction of race or class, would be taught to think of itself as a unified and exalted power for good in the world—humane, unselfish, and aspiring.

OUR DUTY TOWARD WORLD PEACE

To protect this country and its productive industries and to exalt the patriotic sentiments of its people are, however, not the only or the strongest motives for abandoning the precious traditional policies of the United States in respect to isolation and the avoidance of foreign entanglements. Durable peace can be maintained after the present war only by a dominant force too strong for Germany, Austria-Hungary, Turkey, and Bulgaria, separately, or in any possible combination, or with any imaginable allies, to attack or to resist. A limited alliance of competent nations—three, four, or five—can promptly provide such a force already trained to concurrent, coöperative action. Federations and parliaments of the world could not do it. They would be too complicated, vast, slow, and unstable. The "Concert of Europe" is utterly discredited, because it has too often brought about, or permitted, concerted injustice, and perpetuated poisonous wrongs. There is no hope of establishing lasting peace through any treaty-making which should include the Central Monarchies. Their acts since July, 1914, prove beyond a doubt that no reliance is to be placed on any pledges or treaties signed by them. No verbal or written evidence of a change of heart on the part of the German people could be depended on. If such a change shall happily occur, the rest of the world will not trust it until its reality is proved by a long course of rational and honorable conduct. What would be the best group of nations for

supplying this dominant force? There might well be two distinct alliances; one for the oceans, the other for the lands. For the oceans, Great Britain, France, and the United States would suffice; but Russia, Italy, Brazil, Argentina, Chile, and Japan would be convenient additions. For continental Europe and the Near East, Great Britain, France, Italy, and Russia would be indispensable, and Spain, Portugal, Belgium, Holland, and Scandinavia would be acceptable additions.

REGENERATED RUSSIA

Some Americans and some Englishmen shrink from Russia as an element in any such combination, on the ground that Russia is an autocratic military empire which steadily aims at expansion of territory. These apprehensions may be allayed by considering that, though Russia is historically and by present necessity a military empire, its Government has done many enlightened and progressive deeds within recent years. It has emancipated the serfs, instituted the Conferences of the Hague, created the Douma, and promoted the communal self-government which characterizes the Russian people. Since the war began it has prohibited the manufacture and sale of vodka, reduced the untoward influence of the Teutonic element in the Petrograd bureaucracy, and so improved the relations between Government and people that the Czar and his young son now go about freely without any special protection; whereas before the war they had to be incessantly guarded against assassination. Moreover, what Russia desires and greatly needs is that the natural outlets for her commerce from the Black Sea and the Baltic should be in friendly and not in hostile hands, and that ports on the Pacific convenient for her use should also be available for her. This traditional Russian ambition is altogether reasonable, and ought to have been gratified long ago.

In order to do its part in maintaining a lasting peace throughout the world, this country should possess a navy next to that of Great Britain in size, and as perfect as it can be made in construction, equipment, and appointments, and in the skill of its officers and men. This up-to-date navy

should be kept ready for instant service at full strength; so long as it can contribute to prevent war in Europe and the East, and to impart that universal confidence in the maintenance of peace which must precede any general reduction of armaments. Such a navy cannot be procured and maintained unless the principle of universal military service is adopted by the American people and put into force. Voluntary enlistment will not furnish in times of peace and industrial prosperity the number of men required for such a navy, nor supply a reserve force of trained men who can be depended on in time of war. Even under the present incitements the American Navy is not fully manned, and it seldom has been except in war time. When war has broken out, there has been no adequate naval reserve.

THE NAVY

The enlarged American Navy should in times of peace be an active school of practice for scouting, blockading, shooting, and manœuvring. The term of enlistment should be short, not exceeding in length whatever period will suffice to give an average young man a sufficient training. The officers would be in times of peace chiefly teachers, for the new men would be joining the Navy in large numbers at frequent intervals. These officers would be, as now, graduates of the Naval Academy, the cadets of the Academy, however, not being nominated by Congressmen, but being selected by their officers on board ship from the successive quotas of young men coming into the Navy. The Swiss rule that nobody shall be an officer in the army who has not served as a private and non-commissioned officer would be of high value in securing an American Navy of proper democratic spirit. The utmost pains should be taken to make the term of service in the Navy valuable to the enlisted man in respect to personal hygiene, manual skill, good mental habits, and character. Every man who serves in the Navy should come out of it a man more useful in the national industries than he would have been without that service, and also a better citizen.

The United States has found uses, since

the war with Spain, for a fairly equipped Army of something less than one hundred thousand men; and a minority of the states have seen reason to maintain a volunteer militia, in the organizing of which no attention has been paid to the married or single state of the volunteers, and but little to their physical fitness for the duties of a soldier. The militia has also been poorly equipped, or sometimes hardly equipped at all for real work. The troubles between the United States and Mexico have revealed the fact that the Regular Army is in numbers insufficient to guard effectively the long border between the two countries—in addition to its other duties—and that the militia of the states is not only too imperfectly equipped to be rapidly mobilized, but also contains a large proportion of men whom it is not expedient to call upon for military service at a distance from their homes.

IMPERFECTIONS OF THE MILITIA

The militia in all the states which maintain any militia was intended, so far as it had any function beyond parades and vacation camps, to keep the peace and give aid during brief periods of local disturbance, like riots and the disorders which attend great catastrophes by earthquake, fire, or flood. A state militia as a rule elects its officers, the privates electing the company officers, the company officers electing the regimental officers, the regimental officers electing the general. The qualities which win votes in such elections are not identical with those which make a good commander in camp, on the march, and on the battlefield. As a national force to be used in any part of the country, or beyond its borders, and for long periods during which the men are detached from their homes and their employments, the state militias are inappropriate. In war with a strong military Power, the militia would not be available for several months, or until all the units had been converted into national units and re-officered in large part. The present Democratic Administration and Congress have rendered a considerable service to the country by giving a clear demonstration to this effect.

Although the Regular Army of the United States is an efficient body of men, well selected, well officered, and possessing a fine esprit de corps, it is not a modern army in the European sense; and it is not the kind of army that a democratic people ought to maintain, having been essentially copied from the English army, which has always been—until "Kitchener's army" was created—an army officered from the upper classes and recruited by voluntary enlistment from the lower. It has never been a popular or national army in the sense of continental Europe, where conscription or universal military service has long prevailed.

FOR A DEMOCRATIC ARMY

If the United States sees reason for maintaining any army at all, it will be wise for it to maintain a democratic army, in which all able-bodied young Americans should serve for several short periods, and then be held in reserve for a long period, its officers being selected from the ranks by their instructors and commanders during the prescribed periods of service, and educated as now at the Military Academy to serve for life as teachers of the successive levies of raw recruits, or held in reserve with liberty to follow civil occupations. A few thousand non-commissioned officers would also be kept in the service permanently, or for considerable periods, to serve as instructors to the raw levies and as non-commissioned officers of any force the country might need for sudden and sustained service.

THE FALLACY OF NON-RESISTANCE

A few philanthropists believe that the world would get on better if there were no armies and navies and no use of force to resist wrong-doers; but non-resistance seems to almost everybody an impracticable international policy at mankind's actual state of progress. The nations have not yet come into Emerson's "region of holiness" where passion passes from them. On the contrary, never before was outrageous violence so rife in the world, and resistance to it by force so indispensable. The policy of non-resistance is nowhere applied to burglars, murderers, or maniacs.

No more can it be applied to Europe, in full view of invasions of Belgium and Serbia, Armenian massacres, and the sudden sinking of passenger steamers, merchantmen, and fishermen. Non-resistance is an admirable moral goal; but reaching it seems at the present day as far off as when Buddha taught, twenty-five hundred years ago, that the use of force was never justifiable or even expedient.

FORCE MUST STILL CONTROL

Since peaceful international relations will need for decades the firm support of a trustworthy protective international force, the United States ought to be in a position to supply part of that force. It is America's clear duty to her inheritance of liberty and to civilization itself to take an effective part in the maintenance of peace and of the freedom of the seas when the present war is over. For the discharge of this duty, and for her own security, America needs a strong navy and a strong potential army, both kept always ready. She can secure neither without adopting the principle of universal service. Such are the lessons of Germany's outbreak in 1914, and of the fifty-years-long Prussian preparation for that outbreak in such secrecy, and with such protestations of innocence, that the other European nations were taken by surprise when the German armies rushed over Belgium bound for Paris.

After peace has been maintained by force for some years, and the world sees that the alliance of a few strong nations to prevent war is effective, and can be trusted, it will be possible to take steps toward a general reduction of armaments, and so to lift a crushing burden from the productive workers of the world. The formation of such an alliance within the next few months would contribute effectively to the arrest of the present horrible destructions, and to the arrangement by conference and negotiation of satisfactory terms for a durable peace. Should not the United States of America be a member of that beneficent alliance? Its past history, its present needs, and its future hopes answer — Yes!

To insure the country against invasion, to help on democratic government in the

world, and to give greater security to humanity for its progress in arts, letters, science, and ethics, free from such terrific crumbings and crashes as the last two years have witnessed, would cost the United States much money, much labor over new legislation, and much patience and self-control on the part of the masses of the people. But are not the results to be attained worth to America and the human race all they would cost?

FITTING MEN TO THEIR TASKS

The present war has demonstrated that the actual fighting force in any campaign has to be supported, equipped, and served by the incessant labor of men and women who greatly exceed in number the actual fighting men, and represent a great variety of civil employments. The principle of universal service skilfully applied will utilize in war time many sorts of special capacities in the individual men. Thus, many young mechanics will be sent to munition factories instead of into the field. Teamsters and chauffeurs will be put into the transportation corps; clerks into the quartermaster's department; medical students and practitioners into the first-aid stations and the hospitals. The Navy will have first choice each year of the young engineers and electricians. The airplanes will be manned by men whose age and previous training qualify them for that work. The selection of the individual for any one of these special functions will be made by his first military teachers; but the personal choice of the individual will naturally be regarded by the selecting authority, if supported by evidence concerning his previous training and his experience. The basic principle of universal service being adopted, and every able-bodied young man having received the elements of a military training, each individual's post of service in case of war will depend on the determination by a selective authority of the employment in which that individual can be most useful to the country. The men needed in munition factories will not be allowed to go to the trenches; and the men fitted to handle the complicated machinery of a battleship or submarine will not be allowed to serve in

the infantry on land. The reservists especially will be employed each in his most appropriate station, in order that no peculiar personal efficiency may be wasted. From motives of economy and efficiency, none but able-bodied men will be taken into the Navy or Army, and none but able-bodied men will be allowed to remain in the fighting force.

CHANGES IN SCHOOLING

From the adoption of the principle of universal service, certain changes in school training would be likely to follow. No distinctly military training would be necessary or desirable during the school age—six to eighteen years; but the total school training should supply the primary essentials for either industrial or military service, and should invariably include the "setting-up" drill which is now associated only with military training. Rifle and pistol shooting, hunting, fishing, using carpenter's tools, climbing, and walking long distances should be encouraged for boys during school life at the appropriate ages; cooking, nursing, sewing, knitting, climbing, and walking for girls; and dancing and swimming for both sexes. The soldier needs much more training of his senses than is given in American schools to-day; but so does the industrial worker, and the home worker. No peculiar mental training need be given in schools to prepare youth of either sex especially for works of war. All the sense and mind training which a skilful soldier needs is just as much needed for the works of peace.

Most of the details in the Swiss system of national defense could be copied with appropriate modifications in an American system of national defense. Before the twentieth year—that is, during school life—the Swiss aim at turning out from their schools vigorous and agile youths who can read, write, and cipher, and know something of the history and geography of Switzerland and the neighboring countries, and something about the history of religious toleration and civil liberty. Swiss boys are also encouraged to become, between the ages of sixteen and twenty, members of preparatory semi-military organizations whose chief object is rifle-shooting

on Sundays. Saturdays could be substituted for Sundays in the United States. The Swiss regulations for encouraging target practice are elaborate and effectual; and the Swiss practices in this respect might all be copied in the United States with one possible exception. The Swiss soldier, during his period of service, is allowed to retain in his own possession the rifle, uniform, and other equipments which the Federation supplies. He keeps them in good order, and does not use them except for work which the State encourages or orders. It may be doubted whether this method could be safely adopted in the United States—at least, until we have had some years' experience of the discipline appropriate to universal military service.

THE SWISS MILITARY SYSTEM

The Swiss system produces an effective army for national defense with minimum demand on the time of the adult male worker; and this fact should commend it for American adoption. The length of service, as given in the report of Lieut. Col. George Bell, Jr., to the Army War College in 1911, is "from sixty to ninety days (according to the corps to which the recruit is assigned) in the first year of service, and from eleven to fourteen days in each of seven (cavalry eight) out of the eleven years following. Between thirty-two and forty the Swiss soldier attends one 'repetition course' of eleven days. There are special 'schools' of twenty to thirty-five days for the training of non-commissioned officers. Commissioned officers are trained for the different corps in 'schools' which require attendance (according to corps) of from forty-five to one hundred and five (in two parts) days. Officers and non-commissioned officers are selected and promoted by their teachers and commanders for merit only, which must be proved in service and by appropriate tests and examinations."

The Australians, to be sure, are attempting to produce an effective army by a method which makes even a smaller claim upon the time of the male adult by utilizing for military drill some of the boy's time; but the Australian system has not

been in force long enough to demonstrate that it is efficient. The Swiss system has repeatedly given abundant proof of remarkable efficiency.

The Swiss Republic resembles the American Republic in several important respects, although the two territories and situations are strikingly unlike. Switzerland is a federation of distinct political entities called cantons, in which four different languages severally prevail, part of the cantons being Catholic and part Protestant. Industrially the people are agricultural, pastoral, manufacturing, or commercial, but universally democratic in manners and customs. The federal legislation concerning education and taxation is more democratic than that of the United States. The country is annually invaded by large numbers of alien laborers. On the whole the stout little republic is a safe guide for the United States in respect to the organization of a competent modern army.

SAFETY WITHOUT MILITARISM

Given universal service, it would require only six or seven years to build up an American army fit to perform all the present functions of the Regular Army and of the militia in the several states, and also to meet the exigencies of an attack on this country by a great military Power. It must be confessed, however, that the United States is but ill prepared for the enactment by Congress of the new legislation required, or for submission by the people to the necessary statutes and regulations. In regard to the new laws and appropriations, it would be safe to copy for the most part the Swiss enactments; because the Swiss are not only a people intensely democratic in theory and practice, but also frugal by necessity. They have escaped war to a remarkable degree considering their exposed situation in central Europe; and they have developed no dangerous military class or objectionable military spirit. They are accustomed, however, to a minute regulation of their lives and labors by government, to which the native American people have never been subjected.

Many thoughtful Americans believe that nothing but heavy disasters in war can

bring the country to adopt the system of universal military service; but others, more sanguine about democratic capacity for wise action in matters which concern nearly the whole people, hope that the horrors of the present war and the example of the national army maintained by Switzerland can bring a majority of the American voters to the conviction that universal military service is the safest, most humane, and worthiest policy for the United States during the next fifty years at least.

The present American Navy can be built up in three or four years into a navy adequate in size, which will embody all the most recent improvements in naval equipment, without much legislation in addition to that recently adopted by Congress in response to the urgency of the present Administration; provided means be found to procure the number of men necessary to keep the whole Navy in commission. Universal service would furnish the men.

AMERICA'S MILITARY NEEDS

The answer, then, to the question at the head of this article is—the United States needs a navy modeled on the British navy, and an army modeled on the Swiss army; and in order to procure both it needs to adopt the principle of brief universal service in the Army or the Navy. The time lost by the young men from the productive industries and the service of the family will be a trifling loss compared with the gain from an increased feeling of devotion to the country in the hearts of multitudes, and a quickened sense of responsibility for its welfare. The slight loss of individual liberty will be more than compensated by experience of a strict, co-operative discipline, and by an enlarged sense of comradeship and community interest among the people.

It is a grave conclusion to come to, that a great democracy whose primary object is the promotion of the public welfare and happiness must arm itself to fight, and must teach all its young men how to fight—which means how to kill and wound other men with whom individually they have no quarrel, to destroy public and private property, to disrupt homes and extinguish

families, to interrupt commerce, and to waste on a prodigious scale the accumulated savings of generations.

What forces this Republic to so awful a conclusion? The same experience which has compelled civilized Society in general to defend itself by force against lunatics and criminals, and the demonstration given during the last two years that the existing governmental and ecclesiastical institutions of the civilized world afford no adequate protection from a sudden but long-prepared outbreak of primitive savagery which has compelled nearly half the population of the earth to set to work with all their energy and ingenuity to kill each other and to destroy each other's property, and to use in that killing and destruction not only all the new instruments with which modern physics, chemistry, and mechanics have supplied it, but all the old instruments of hand-to-hand fighting, such as the spear—now bayonet—the short sword, and the hand grenade. Neither religion nor popular education has shown any power to prevent this relapse into savagery. The modern means of easy communication by printing press, telegraph, and telephone have not prevented governments from misleading their people by withholding the truth and circulating falsehoods. Censors and martial law have triumphed over the ordinary means of publicity. Never in the whole history of the world has despotic government wrought such immense mischief; because never before have despotisms been able to wield with so much skill such highly organized and accumulated forces.

A GRAVE BUT NECESSARY CHOICE

For the nations that already possess a good deal of freedom, and mean to have more, there is no other way to security and peace than to organize and use their own forces with greater skill and more devotion than the nations despotically ruled exhibit. Like all the other free nations, the United States must be prepared to defend its territory and its ideals. Submission

and non-resistance are not safe policies either for the United States or for civilized Society. Therefore the United States needs a navy of the best possible sort as regards men, vessels, and equipment, and an army of the most patriotic quality and surest efficiency. To secure this navy and this army it needs to adopt the principle of universal service. To do nothing and run for luck is not good sense, when such vital interests are at stake. Those who think it high time for men to learn war no more, and that all teaching of the military art is to be deplored, can console themselves with the reflections that, whereas many millions of young Americans, on the principle of universal service, would learn how to fight, only a small proportion of the total mass would ever be called on actually to fight, and that the better the teaching the smaller that proportion would probably be. Moreover, the small proportion of American youth that in the course of years would come to the actual killing of fellow-men would be actuated at the moment by lofty motives, such as love of home and country, and unselfish devotion to the highest interests of humanity.

FACING THE FACTS

Despite the heterogeneous character of the people of the United States as respects race or stock, the masses of the people worship the same precious ideals of liberty, law, and public happiness. At heart they know that these ideals, so dear to them, will have to be protected and furthered by force for many a year to come, the world being what it is. Everybody hopes that the world is going to be very different hereafter from what it is in these grievous days of return to primitive savagery; but the conduct of the liberty-loving nations to-day and to-morrow must be determined by the hard, actual facts. They cannot organize now the perpetual defense of liberty under law; but they can provide promptly, through practicable alliances, securities which will last at least for one generation.

THE LATE KING AND QUEEN OF RUMANIA

Queen Elizabeth, better known perhaps by her pen name, Carmen Sylva, and King Carol I, an ardent German who worked unceasingly up to the time of his death in 1914 to have his kingdom join the Central Powers



ON THE FLANKS OF THE BULGAR

RUMANIA AND GREECE, WHOSE MENACE TO BULGARIA ON THE NORTH AND SOUTH HAS SIGNIFICANTLY ALTERED THE WAR MAP OF EUROPE



KING FERDINAND, OF RUMANIA

Hohenzollern monarch of an anti-German kingdom. Rumania for thirty-three years was bound to Germany and Austria by a secret treaty which the Rumanian Crown Council, on August 3, 1914, decided was unconstitutional.



QUEEN MARIE, OF RUMANIA

The daughter of the late Duke of Edinburgh and grand-daughter of the late Queen Victoria of England, who probably influenced her husband's decision to renounce his German connection in favor of intervention on the side of the Entente Allies



KRONSTADT

One of the chief cities of Transylvania, captured by the Rumanians shortly after their declaration of war upon Austria as the first step in their redemption of the province of Transylvania



IN THE PROVINCE OF TRANSYLVANIA

The easternmost province of Hungary in which more than 4,000,000 Rumanians live under alien rule. It is the national aspiration of Rumania to incorporate this province into her kingdom and release her subjects from Hungarian oppression



A CHURCH IN BUKHAREST

The majority of the Rumanians belong to the Orthodox Greek Catholic Church—the state religion—but there are many Roman Catholics, Protestants, Jews, and Mohammedans among the people



THE ROMAN ATHENÆUM AT BUKHAREST

The Rumanians deny that they are a Balkan nation and claim to be descendants of Roman legionaries of the ancient province of Dacia



THE ROYAL PALACE AT BUKHAREST

The winter residence of the King and Queen. Bukharest is a fortified city and contains thirty-six forts, an arsenal, three military academies, a military hospital, and barracks for 30,000 troops



THE NATIONAL BANK AT BUKHAREST

The Rumanians regard themselves as the Frenchmen of the East, and Bukharest, their capital, aspires to be a miniature Paris



A PEASANT GIRL

Rumania contains about 53,500 square miles and a population of 7,500,000. About 12,000,000 Rumanians live in surrounding countries



TYPES OF RUMANIANS

The soil of Rumania is especially fertile and much wheat is grown. That this food supply is cut off from the Central Powers is of great importance to the Allies

A RUMANIAN COUPLE

Two dissimilar types are found among the Rumanians, one fair-haired, florid, and blue-eyed, the other, dark, resembling the Italians



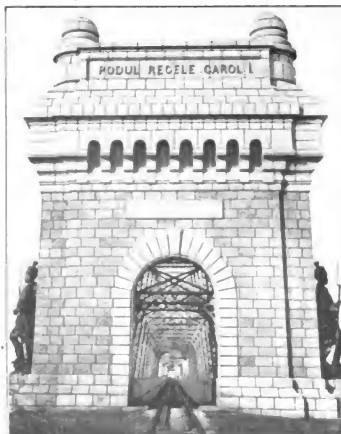
RUMANIAN WOMEN

Although many of the cities of Rumania are modern, life in the country towns along the Danube and in the Dobrudja is still distinctively primitive



THE IRON GATES OF THE DANUBE

So called by the Turks on account of the number of rocks in the river. The Rumanians early launched an offensive at this point



THE KING CAROL BRIDGE

The first railroad in Rumania was not opened until 1869, but to-day there are 2,382 miles of railroads, almost all of which are state-owned



A CHURCH IN JASSY

Jassy is a city of great strategic importance, connecting by rail Galatz on the Danube, Kishinef in Bessarabia, and Czernowitz in Bukowina



THE BERLIN-TO-CONSTANTINOPLE RAILROAD

The strategy of the Entente Allies aims to break this line of communication, probably at some point in northern Serbia, and so isolate Bulgaria and Turkey from their allies, Germany and Austria-Hungary



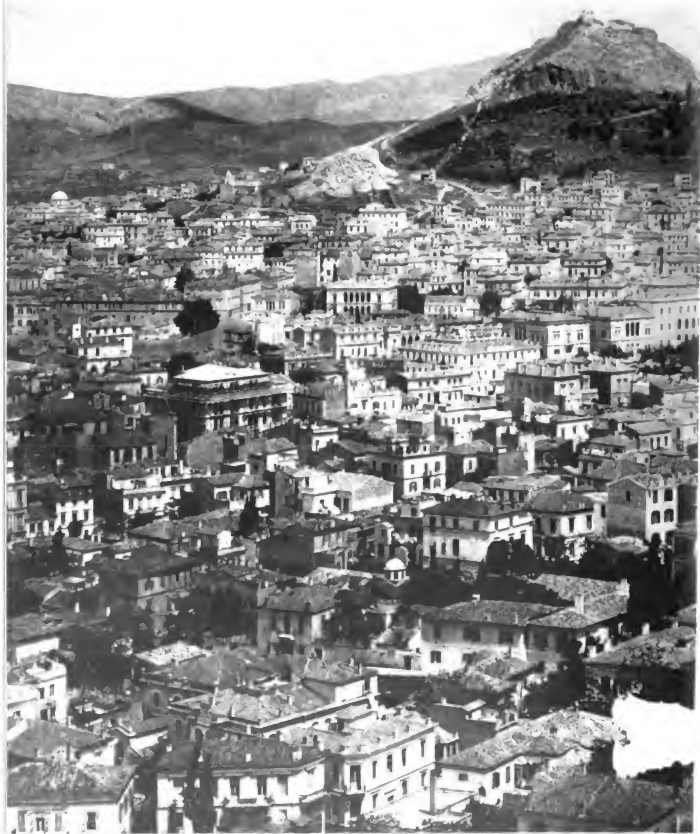
THE QUEEN OF GREECE

The sister of the German Kaiser. Her influence with King Constantine has probably been instrumental in keeping Greece from early entrance into the war on the side of the Entente Powers



THE KING OF GREECE

Whose pro-German tendencies so long kept Greece in a neutrality which favored the Teutons, until Allied pressure and popular hostility endangered the security of his throne



"ATHENS, THE EYE OF GREECE,
A jumble of modern buildings and ancient ruins. The big building in the middle dis



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MOTHER OF ARTS AND ELOQUENCE"

tance of the right-hand picture is the Royal Palace, the home of King Constantine



Photograph from *The Islands*

THE ISLAND OF CRETE

Birthplace of Eleutherios Venizelos, the "Cavour of the Balkans" and leader of the pro-Allied party in Greece, who has waged a long and, on the whole, successful policy favoring intervention on the side of the Allies



THE KEY TO THE BALKANS

Saloniki, occupied by the armies of the Entente Allies since their evacuation of the Gallipoli peninsula. It is the focal point for their offensive against Bulgaria and Turkey



ONE OF THE MANY BEAUTIFUL ISLANDS OF GREECE

Corfu, in the Ionian Sea. The Kaiser owned the famous Achilleion Palace here which was seized by the Allies shortly after the outbreak of the war



GREEK SHOPS

Greek laborers, although well organized, are poorly paid, the average wage being about sixty cents a day. Skilled workers receive approximately twice as much



A STREET IN CORFU, WHERE THE SERBIAN ARMY TOOK REFUGE

After the Bulgars and Germans had conquered Serbia, the remnants of King Peter's army were gathered here, refitted, and made again into an effective fighting force



THE STADIUM AT ATHENS

Where the Olympic games are held. The revival of these ancient contests as an international event a few years ago did much to bring modern Greece into closer touch with other nations



Photograph from *The Atlantis*

GREEK RESERVISTS FROM AMERICA

English is spoken generally throughout Greece, due in a small measure to the number of Greeks who have returned from the United States



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THE CHARACTERISTIC GREECE OF MOUNTAINS AND WATERS

Greece is essentially a maritime nation, but in the last few years she has acquired much inland territory, most of which is rugged and barren like this view of Delphi

Flying for France

WITH THE AMERICAN ESCADRILLE AT VERDUN

BY

JAMES McCONNELL

(SERGEANT-PILOT IN THE FRENCH FLYING CORPS)

[Mr. McConnell is twenty-eight years of age, was born in Chicago and educated at Haverford School in Pennsylvania and afterward at the University of Virginia. After leaving college he worked for a short time in New York and then became Land and Industrial Agent of a small railroad in North Carolina. In January, 1915, he left his work in North Carolina and sailed from New York to become a driver in the American Ambulance in France. During this service he was mentioned in the Orders of the Day for conspicuous bravery in attending the wounded under fire and was given the much-coveted "croix de guerre." While in the Ambulance service he became imbued with the belief that the French were fighting the fight for democracy against autocracy and militarism, and he therefore enlisted in the French aviation service, in which, since April, 1916, he and other American aviators have been fighting for France.—THE EDITORS.]

BENEATH the canvas of a huge hangar mechanics are at work on the motor of an airplane. Outside, on the borders of an aviation field, others loiter awaiting their aerial charges' return from the sky. Near the hangar stands a hut-shaped tent. In front of it several short-winged biplanes are lined up; inside it three or four young men are lolling in wicker chairs.

They wear the uniform of French army aviators. These uniforms, and the grim-looking machine guns mounted on the upper planes of the little aircraft, are the only warlike note in a pleasantly peaceful scene. The war seems very remote. It is hard to believe that the greatest of all battles—Verdun—rages only twenty-five miles to the north, and that the field and hangars and mechanics and aviators and airplanes are all playing a part therein.

Suddenly there is the distant hum of a motor. One of the pilots emerges from the tent and gazes fixedly up into the blue sky. He points, and one glimpses a black speck against the blue, high overhead. The sound of the motor ceases, and the speck grows larger. It moves earthward in steep dives and circles, and, as it swoops closer, takes on the shape of an airplane. Now

one can make out the red, white, and blue circles under the wings which mark a French warplane, and the distinctive insignia of the pilot on its sides.

"Ton patron arrive!" one mechanic cries to another. "Your boss is coming!"

The machine dips sharply over the top of a hangar, straightens out again near the earth at a dizzy speed a few feet above it and, losing momentum in surprisingly short time, hits the ground with tail and wheels. It bumps along a score of yards and then, its motor whirring again, turns, rolls toward the hangar, and stops. A human form, enveloped in a species of garment for all the world like a diver's suit, and further adorned with goggles and a leather hood, rises unsteadily in the cockpit, clambors awkwardly overboard, and slides down to terra firma.

"Hell," mumbles that gentleman, as he starts divesting himself of his flying garb.

"What's wrong now?" inquires one of the tenants of the tent.

"Everything, or else I've gone nutty," is the indignant reply, delivered while disengaging a leg from its Teddy Bear trousering. "Why, I emptied my whole roller on a Boche this morning, point blank, at not fifteen feet off. His machine gun quit firing and his propeller wasn't turning

and yet the darn fool just hung up there as if he was tied to a cloud. Say, I was so sure I had him it made me sore—felt like running into him and yelling, 'Now, you fall, you bum!'"

He is the first of the American Escadrille, composed of Americans who have volunteered to fly for France for the duration of the war, to return to their station near Bar-le-Duc, twenty-five miles south of Verdun, from a flight over the battle-front of the Meuse. Almost immediately other dots appear in the sky, and one by one turn into airplanes as they wheel downward. Finally all six of the machines that have been aloft are back on the ground and the American Escadrille has one more sortie over the German lines to its credit.

PERSONNEL OF THE AMERICAN ESCADRILLE

Like all worth-while institutions, the American Escadrille, of which I have the honor of being a member, was of gradual growth. When the war began, it is doubtful if anybody anywhere envisaged the possibility of an American entering the French aviation service. Yet by the fall of 1915, scarcely more than a year later, there were six Americans serving as full-fledged pilots, and in the summer of 1916 the list numbered fifteen or more, with twice as many again training for their pilots' licenses in the military aviation schools.

The pioneer of them all was William Thaw, of Pittsburg, who is to-day the only American holding a commission in the French flying corps. Lieutenant Thaw, a flyer of considerable reputation in America before the war, had enlisted in the Foreign Legion in August, 1914. With considerable difficulty he had himself transferred, in the early part of 1915, into aviation, and the autumn of that year found him piloting a Caudron biplane, and doing excellent observation work. At the same time, Sergeants Norman Prince, of Boston, and Elliot Cowdin, of New York, who were the first to enter the aviation service coming directly from the United States, were at the front on Voisin 'planes with a cannon mounted in the bow. Sergeant Bert Hall, who signs from the Lone Star State and had got himself shifted from the Foreign Legion to aviation

soon after Thaw, was flying a Nieuport fighting machine, and, a little later, instructing less advanced students of the air in the Avord training school. His particular chum in the Foreign Legion, James Bach, who also had become an aviator, had the distressing distinction soon after he reached the front of becoming the first—and so far the only—American to fall into the hands of the enemy. Going to the assistance of a companion who had broken down in landing a spy in the German lines, Bach smashed his machine against a tree. Both he and his French comrade were captured, and Bach was twice court-martialed by the Germans on suspicion of being an American "Franc-tireur"—the penalty for which is death! He was acquitted, but of course still languishes in a prison camp "somewhere in Germany." The sixth of the original sextet was Adjutant Didier Masson, who did exhibition flying in the States until, Carranza having grown ambitious in Mexico, he turned his talents to spotting *los Federales* for General Obregon. When the real war broke out, Masson answered the call of his French blood and was soon flying and fighting for the land of his ancestors.

Except poor Bach, all of these men are at present in the American Escadrille. Of its other members Sergeant Givas Lufbery, American citizen and soldier, but dweller in the world at large, was among the earliest to wear the French airman's wings. Exhibition work with a French pilot in the Far East prepared him efficiently for the task of patiently unloading explosives on German military centres from a slow-moving Voisin, which was his first mount. Upon the heels of Lufbery came two more graduates of the Foreign Legion, Kiffin Rockwell, of Atlanta, Ga., who had been wounded at Carency, [Kiffin Rockwell was killed in action on September 23d last, after this article was written.—The Editors] and Victor Chapman, of New York, who in recovering from his wounds became an airplane bomb-dropper and so caught the craving to become a pilot. At about this time one Paul Pavelka, whose birthplace was Madison, Conn., and who from the age of fifteen had sailed the Seven Seas, managed to slip

out of the Foreign Legion into aviation and joined the other Americans at Pau.

Chouteau Johnson, of New York; Lawrence Rumsey, of Buffalo; Dudley Hill, of Peekskill, N. Y.; and Clyde Balsley, of El Paso, one after another doffed the ambulance driver's khaki for the horizon-blue of the French flying corps. All of them had seen plenty of action collecting the wounded under fire, but all of them were tired of being non-combatant spectators. More or less the same feelings actuated me, I suppose. I had come over from Carthage, N. C., in January, 1915, and worked with an American Ambulance section in the Bois le Prêtre. All along I had been convinced that the United States ought to aid in the struggle against Germany. With that conviction, it was plainly up to me to do more than drive an ambulance. The more I saw the splendor of the fight the French were fighting, the more I began to feel like an *embusqué*—what the British call a "shirker." So I made up my mind to go into aviation.

ENTERING THE FRENCH AIR SERVICE

A special channel had been created for the reception of applications from Americans, and my own was favorably replied to within a few days. It took four days more to pass through all the various departments, sign one's name to a few hundred papers, and undergo the physical examinations. Then I was sent to the aviation depot at Dijon and fitted out with a uniform and personal equipment. The next stop was the school at Pau, where I was to be taught to fly. My elation at arriving there was second only to my satisfaction at being a French soldier. It was a vast improvement, I thought, over the American Ambulance.

Talk about forming an all-American flying unit, or escadrille, was rife while I was at Pau. What with the pilots already brevetted, and the *élèves*, or pupils in the training schools, there were quite enough of our compatriots to man the dozen airplanes in one escadrille. Every day somebody "had it absolutely straight" that we were to become a unit at the front, and every other day the report turned out to be untrue. But at last, in the month of

February, our dream came true. We learned that a captain had actually been assigned to command an American escadrille and that the Americans at the front had been recalled and placed under his orders. Soon afterward we *élèves* got another delightful thrill.

Thaw, Prince, Cowdin, and the other veterans were training on the Nieuport. That meant the American escadrille was to fly the Nieuport, the best type of *avion de chasse*, and hence would be a fighting unit. It is necessary to explain parenthetically here that French military aviation, generally speaking, is divided into three groups, i. e., the *avions de chasse*, or airplanes of pursuit, which are used to hunt down enemy aircraft or to fight them off; *avions de bombardement*, big, unwieldy monsters for use in bombarding raids; and *avions de réglage*, cumbersome creatures designed to regulate artillery fire, take photographs, and do scout duty. The Nieuport is the smallest, fastest-rising, fastest-moving biplane in the French service. It can travel 110 miles an hour, and is a one-man apparatus with a machine gun mounted on its roof and fired by the pilot with one hand while with the other and his feet he operates his controls.¹ The French call

¹In a letter to a relative in North Carolina, written May 1, 1916, Mr. McConnell describes his machine and his work in greater detail:

"You ask me what my work will be and how my machine is armed. First of all I mount an *avion de chasse* and I am supposed to shoot down Boches or keep them away from our lines. I do not do observation, or regulating of artillery fire. That is handled by escadrilles equipped with bigger machines. I mount at daybreak over the lines; stay at from 11,000 to 15,000 feet and wait for the sight of an enemy 'plane. It may be a bombardment machine, a regulator of fire, an observer, or an *avion de chasse* looking for me. Whatever she is I make for her and manoeuvre for position. All the machines carry different gun positions and one seeks the "blind" side. Having obtained the proper position one turns down or up, whatever the case may be, and when within fifty yards opens up the machine gun. That is on the upper plane and it is sighted by a series of holes and cross webbs. As one is passing at a terrific rate there is not time for many shots, so unless wounded or one's machine injured by the first try, for the enemy 'plane shoots too, one tries it again and again, until there's nothing doing or the other fellow is dropped. Aside from work over the lines, which is comparatively calm, there is the job of convoying bombardment trips. That is the rotten task."

their Nieuport pilots the "aces" of the air. No wonder we were tickled to be included in that august brotherhood!

Before the American Escadrille became an established fact, one of its members, Elliot Cowdin, succeeded in bringing down a German machine, and thus winning the first *Médaille Militaire*, the highest decoration that can be awarded a non-commissioned officer or private. He and Thaw, having mastered the Nieuport, had managed to be sent to the Verdun front, and it was there that Cowdin's machine gun scored its bull's eye.

After completing his training, receiving his military pilot's brevet, and being perfected on the type of 'plane he is to use at the front, an aviator is ordered to the reserve headquarters near Paris to await his call. Kiffin Rockwell and Victor Chapman had been there for months, and I had just arrived, when on the 16th of April orders came for the Americans to join their escadrille at Luxeuil, in the Vosges.

The rush was breathless! Never were flying clothes and fur coats drawn from the quartermaster, belongings packed, and red tape in the various administrative bureaux unfurled with such headlong haste. In a few hours we were aboard the train, panting but happy. Our party consisted of Sergeant Prince and Rockwell, Chapman, and myself, who were only corporals at that time. We were joined at Luxeuil by Lieutenant Thaw and Sergeants Hall and Cowdin.

For the veterans our arrival at the front was devoid of excitement; for the three neophytes—Rockwell, Chapman, and me—it was the beginning of a new existence, the entry into an unknown world. Of course Rockwell and Chapman had seen plenty of warfare on the ground, but warfare in the air was as novel to them as to me. For us all it contained unlimited possibilities for initiative and service to France, and for them it must have meant, too, the restoration of personality lost during those months in the trenches with the Foreign Legion. Rockwell summed it up characteristically.

"Well, we're off for the races," he remarked.

There is a considerable change in the life of a pilot when he arrives on the front. During the training period he is subject to rules and regulations as stringent as those of the barracks. But once assigned to duty over the firing line he receives the treatment accorded an officer, no matter what his grade. Save when he is flying or on guard, his time is his own. There are no roll-calls or other military frills, and in place of the bunk he slept upon as an *élève* he finds a regular bed in a room to himself, and the services of an orderly. Even men of higher rank who, although connected with his escadrille, are not pilots, treat him with respect. His two mechanics are under his orders. Being volunteers, we Americans are shown more than the ordinary consideration by the ever-generous French Government, which sees that we have the best of everything.

On our arrival at Luxeuil we were met by Captain Thenault, the French commander of the American Escadrille—officially known as No. 124, by the way—and motored to the aviation field in one of the staff cars assigned to us. I enjoyed that ride. Lolling back against the soft leather cushions, I recalled how in my apprenticeship days at Pau I had had to walk six miles for my laundry.

THE AMERICAN ESCADRILLE

The equipment awaiting us at the field was even more impressive than our automobile. Everything was brand new, from the fifteen Fiat trucks to the office, magazine, and rest tents. And the men attached to the Escadrille! At first sight they seemed to outnumber the Nicaraguan army—mechanicians, chauffeurs, armorers, motor cyclists, telephonists, wireless operators, Red Cross stretcher bearers, clerks! Afterward I learned they totaled seventy-odd, and that all of them were glad to be connected with the American Escadrille.

In their hangars stood our trim little Nieuports. I looked mine over with a new feeling of importance and gave orders to my mechanics for the mere satisfaction of being able to. To find oneself the sole proprietor of a fighting airplane is quite a treat, let me tell you. One gets accustomed to it, though, after one has

used up two or three of them—at the French Government's expense.

Rooms were assigned to us in a villa adjoining the famous hot baths of Luxeuil, where Cæsar's cohorts were wont to besport themselves. We messed with our officers, Captain Thenault and Lieutenant de Laage de Mieux, at the best hotel in town. An automobile was always on hand to carry us to the field. I began to wonder whether I was a summer resorter instead of a soldier.

Among the pilots who had welcomed us with open arms, we discovered the famous Captain Happe, commander of the Luxeuil bombardment group. The doughty bomb-dispenser, upon whose head the Germans have set a price, was in his quarters. After we had been introduced, he pointed to eight little boxes¹ arranged on a table.

"They contain *Croix de Guerre* for the families of the men I lost on my last trip," he explained; and he added: "It's a good thing you're here to go along with us for protection. There are lots of Boches in this sector."

I thought of the luxury we were enjoying: our comfortable beds, baths, and motor cars; and then I recalled the ancient custom of giving a man selected for the sacrifice a royal time of it before the appointed day.

THE ESCADRILLE'S FIRST SORTIE

The American Escadrille was sent to Luxeuil primarily to acquire the teamwork necessary to a flying unit. Then, too, the new pilots needed a taste of anti-aircraft artillery to familiarize them with the business of aviation over a battlefield.

¹The following quotation from a letter written by Mr. McConnell last May adds a graphic touch to the story of the "eight little boxes":

"We have the honor of being attached to a squadron that is the most famous in the French army. The captain of the outfit once lost his whole escadrille, and on the last trip eight lost their lives. It was a wonderful fight. The squadron was attacked by thirty-three Boches. Two French planes crashed to earth; then two German; another German was set on fire and streaked down followed by a streaming column of smoke. Another Frenchman fell; another German and then a French lieutenant mortally wounded and, realizing he was dying, plunged his aeroplane into a German below him and both fell."

The Germans shot well in that sector, too. Lieutenant Thaw's machine was hit at an altitude of 13,000 feet.

The memory of the first sortie we made as an escadrille will always remain fresh in my mind because it was also my first trip over the lines². We were to leave at six in the morning. Captain Thenault pointed out on his aerial map the route we were to follow. Never having flown over this region before, I was afraid of losing myself. Therefore, as it is easier to keep other airplanes in sight when one is above them, I began climbing as rapidly as possible, meaning to trail along in the wake of my companions. Unless one has had practice in flying in formation, however, it is hard to keep in contact. The diminutive *avions de chasse* are the merest pinpoints against the great sweep of landscape below and the limitless heavens above. The air was misty and clouds were gathering. Ahead there seemed a barrier of them. Although as I looked down the ground showed plainly, in the distance everything was hazy. Forging up above the mist, at 7,000 feet, I lost the others altogether. Even when they are

²More about this first sortie is told in a letter from Mr. McConnell dated May 14, 1916:

"Well, I've made my first trip over the lines and proved a few things to myself. First I can stand high altitudes. I had never been above 7,000 feet before, nor had I flown more than an hour. On my trip to Germany I went to 14,000 feet and was in air for two hours. I wore the fur head-to-foot combination they give one and paper gloves under the fur gloves you sent me. I was not cold. In a way it seemed amusing to be going out knowing as little as I do. My mitrailleuse had been mounted the night before. I had never fired it. Nor did I know the country at all even though I'd motored along our lines. I followed the others or I surely would have been lost. I shall have to make special trips to study the land and be able to make it out from my map which I carry on board. For one thing the weather was hazy and clouds obscured the view.

"To-day the army moving-picture outfit took pictures of us. We had a big show. Thirty bombardment planes went off like clock-work and we followed. We circled and swooped down by the camera. Then we were taken in groups, individually, in flying togs, and God knows what all. They will be shown in the States. If you happen to see them you can recognize my machine because MAC is painted on the side.

"We didn't see any Boche planes on our trip. We were too many. The only way to do is to sneak up on them."

not closely joined, the clouds, seen from immediately above, appear as a solid bank of white. The spaces between are indistinguishable. It is like being in an Arctic ice field.

To the south I made out the Alps. Their glittering peaks projected up through the white sea about me like majestic icebergs. Not a single 'plane was visible anywhere, and I was growing very uncertain about my position. My "splendid isolation" had become oppressive when, one by one, the others began bobbing up above the cloud level.

We were over Belfort and headed for the trench lines. The cloud banks dropped behind, and below us we saw the smiling plain of Alsace stretching eastward to the Rhine. It was distinctly pleasurable, flying over this conquered land. Following the course of the canal that runs to the Rhine I sighted, from a height of 13,000 feet over Dannemarie, a series of brown, woodwormlike tracings on the ground—the trenches!

BURSTING SHRAPNEL COULDN'T BE HEARD

My attention was drawn elsewhere almost immediately, however. Two balls of black smoke had suddenly appeared close to one of the machines ahead of me, and with the same disconcerting abruptness similar balls began to dot the sky above, below, and on all sides of us. We were being shot at with shrapnel. It was interesting to watch the flash of the bursting shells, and the attendant smoke puffs—black, white, or yellow, depending on the kind of shrapnel used. The roar of the engine drowned the noise of the explosions. Strangely enough, my feelings about it were wholly impersonal.

We turned north after crossing the lines. Mulhouse seemed just below us, and I noted with a keen sense of satisfaction our invasion of real German territory. The Rhine, too, looked delightfully accessible. As we continued northward I distinguished the twin lakes of Gérardmer sparkling in their emerald setting. Where the lines crossed the Hartmanns-Weilerkopf there were little spurts of brown smoke as shells burst in the trenches. One could scarcely pick out the old city of Thann from among

the numerous neighboring villages, so tiny it seemed in the valley's mouth. I had never been higher than 7,000 feet and was unaccustomed to reading country from a great altitude. It was also bitterly cold, and even in my fur-lined combination I was shivering. I noticed, too, that I had to take long, deep breaths in the rarefied atmosphere. Looking downward at a certain angle, I saw what at first I took to be a round, shimmering pool of water. It was simply the effect of the sunlight on the congealing mist.

ROCKWELL "GETS" A GERMAN

We had been keeping an eye out for German machines since leaving our lines, but none had shown up. It wasn't surprising, for we were too many. Only four days later, however, Rockwell brought down the Escadrille's first airplane in his initial aerial combat. He was flying alone when, over Thann, he came upon a German on reconnaissance. He dived and the German turned toward his own lines, opening fire from a long distance. Rockwell kept straight after him. Then, closing to within thirty yards, he pressed on the release of his machine gun, and saw the enemy gunner fall backward and the pilot crumple up sideways in his seat. The 'plane flopped downward and crashed to earth just behind the German trenches. Swooping close to the ground, Rockwell saw its debris burning away brightly. He had turned the trick with but four shots and only one German bullet had struck his Nieuport. An observation post telephoned the news before Rockwell's return, and he got a great welcome. All Luxeuil smiled upon him—particularly the girls. But he couldn't stay to enjoy his popularity. The Escadrille was ordered to the sector of Verdun.

While in a way we were sorry to leave Luxeuil, we naturally didn't regret the chance to take part in the aerial activity of the world's greatest battle. The night before our departure some German aircraft destroyed four of our tractors and killed six men with bombs, but even that caused little excitement compared with going to Verdun. We would get square with the Boches over Verdun, we thought

—it is impossible to chase airplanes at night, so the raiders made a safe getaway.

As soon as we pilots had left in our machines, the trucks and tractors set out in convoy, carrying the men and equipment. The Nieuports carried us to our new post in a little more than an hour. We stowed them away in the hangars and went to have a look at our sleeping quarters. A commodious villa half way between the town of Bar-le-Duc and the aviation field had been assigned to us, and comforts were as plentiful as at Luxeuil.

Our really serious work had begun, however, and we knew it. Even as far behind the actual fighting as Bar-le-Duc one could sense one's proximity to a vast military operation. The endless convoys of motor trucks, the fast flowing stream of troops, and the distressing number of ambulances brought realization of the near presence of a gigantic battle.

Within a twenty-mile radius of the Verdun front aviation camps abound. Our Escadrille was listed on the schedule with the other fighting units, each of which has its specified flying hours rotating so there is always an *escadrille de chasse* over the lines. A field wireless to enable us to keep track of the movements of enemy 'planes became part of our equipment.

Lufbery joined us a few days after our arrival. He was followed by Johnson and Balsley, who had been on the air guard over Paris. Hill and Rumsey came next, and after them Masson and Pavelka. Nieuports were supplied them from the nearest depot, and as soon as they had mounted their instruments and machine guns they were on the job with the rest of us. Fifteen Americans are or have been members of the American Escadrille, but there have never been as many as that on duty at any one time.

AT VERDUN

Before we were fairly settled at Bar-le-Duc, Hall brought down a German observation craft and Thaw a Fokker. Fights occurred on almost every sortie. The Germans seldom cross into our territory, unless on a bombarding jaunt, and thus practically all the fighting takes place on their side of the line. Thaw dropped his

Fokker in the morning, and on the afternoon of the same day there was a big combat far behind the German trenches. Thaw was wounded in the arm, and an explosive bullet detonating on Rockwell's windshield tore several gashes in his face. Despite the blood which was blinding him Rockwell managed to reach an aviation field and land. Thaw, whose wound bled profusely, landed in a dazed condition just within our lines. He was too weak to walk, and French soldiers carried him to a field dressing station, whence he was sent to Paris for further treatment. Rockwell's wounds were less serious and he insisted on flying again almost immediately.

A BATTLE IN THE AIR

A week or so later Chapman was wounded. Considering the number of fights he had been in and the courage with which he attacked it was a miracle he had not been hit before. He always fought against odds and far within the enemy's country. He flew more than any of us, never missing an opportunity to go up, and never coming down until his gasoline was giving out. His machine was a sieve of patched-up bullet holes. His nerve was almost superhuman and his devotion to the cause for which he fought sublime. The day he was wounded he attacked four machines. Swooping down from behind, one of them, a Fokker, rid-dled Chapman's 'plane. One bullet cut deep into his scalp, but Chapman, a master pilot, escaped from the trap, and fired several shots to show he was still safe. A stability control had been severed by a bullet. Chapman held the broken rod in one hand, managed his machine with the other, and succeeded in landing on a nearby aviation field. His wound was dressed, his machine repaired, and he immediately took the air in pursuit of some more enemies. He would take no rest, and with bandaged head continued to fly and fight.

The Escadrille's next serious encounter with the foe took place a few days later. Rockwell, Balsley, Prince, and Captain Thenault were surrounded by a large number of Germans, who, circling about them, commenced firing at long range. Realizing their numerical inferiority, the

Americans and their commander sought the safest way out by attacking the enemy machines nearest the French lines. Rockwell, Prince, and the captain broke through successfully, but Balsley found himself hemmed in. He attacked the German nearest him, only to receive an explosive bullet in his thigh. In trying to get away by a vertical dive his machine went into a corkscrew and swung over on its back. Extra cartridge rollers dislodged from their case hit his arms. He was tumbling straight toward the trenches, but by a supreme effort he regained control, righted the 'plane, and landed without disaster in a meadow just behind the firing line.

Soldiers carried him to the shelter of a near-by fort, and later he was taken to a field hospital, where he wavered for days between life and death. Ten fragments of the explosive bullet were removed from his stomach. He bore up bravely, and became the favorite of the wounded officers in whose ward he lay. When we flew over to see him they would say, *Il est un brave petit gars, l'aviateur américain* [He's a brave little fellow.] On a shelf by his bed, done up in a handkerchief, he kept the pieces of bullet taken out of him, and under them some sheets of paper on which he was trying to write to his mother back in El Paso.

Balsley was awarded the *Médaille Militaire* and *Croix de Guerre*, but the honors scared him. He had seen them decorate officers in the ward before they died.

CHAPMAN'S LAST FIGHT

Then came Chapman's last fight. Before leaving, he had put a couple of bags of oranges in his machine to take to Balsley, who liked to suck them to relieve his terrible thirst, after the day's flying was over. There was an aerial struggle against odds far within the German lines, and Chapman, to divert their fire from his comrades, engaged several enemy airmen at once. He sent one tumbling to earth, and had forced the others off when two more swooped down upon him. Such a fight is a matter of seconds, and one cannot clearly see what passes. Lufbery and Prince, whom Chapman had defended so gallantly, regained the French lines. They

told us of the combat, and we waited on the field for Chapman's return. He was always the last in, so we were not much worried. Then a pilot from another fighting escadrille telephoned us that he had seen a Nieuport falling. A bit later the observer of a reconnaissance airplane called up and told us how he had witnessed Chapman's fall. The wings of the 'plane had buckled, and it had dropped like a stone, he said.

We talked in lowered voices after that; we could read the pain in one another's eyes. If only it could have been some one else, was what we all thought, I suppose. To lose Victor was not merely an irreparable loss to us, but to France and to the world as well. I kept thinking of him lying over there, and of the oranges he was taking to Balsley. As I left the field I caught sight of Victor's mechanic leaning against the end of our hangar. He was looking northward into the sky where his "patron" had vanished, and his face was very sad.

PROMOTIONS AND DECORATIONS

By this time Prince and Hall had been made adjutants, and we "corporals" transformed into sergeants. I frankly confess to a feeling of great satisfaction at receiving that grade in the world's finest army. I was a far more important person, in my own estimation, than I had been as a second lieutenant in the militia at home. The next impressive event was the awarding of decorations. We had assisted at that ceremony for Cowdin at Luxeuil, but this time three of our messmates were to be honored for the Germans they had brought down. Rockwell and Hall received the *Médaille Militaire* and *Croix de Guerre*, and Thaw, being a lieutenant, the Legion of Honor and another "palm" for the ribbon of the *Croix de Guerre* he had won previously. Thaw, who came up from Paris especially for the presentation, still carried his arm in a sling.

There were also decorations for Chapman, but poor Victor, who so often had been cited in the Order of the Day, was not on hand to receive them.

Our daily routine goes on with little change. Whenever the weather permits—

that is, when it isn't raining, and the clouds aren't too low—we fly over the Verdun battlefield at the hours dictated by General Headquarters. As a rule the most successful sorties are those in early morning.

We are called while it's still dark. Sleepily I try to reconcile the French orderly's muttered, *C'est l'heure, Monsieur*, that rouses me from slumber, with the strictly American words and music of "When That Midnight Choo-Choo Leaves for Alabam'" warbled by a particularly wide-awake pilot in the next room. A few minutes later, having swallowed some coffee, we motor to the field. The east is turning gray as the hangar curtains are drawn apart and our machines trundled out by the mechanics. All the pilots whose planes are in commission—save those remaining behind on guard—prepare to leave. We average from four to six on a sortie, unless too many flights have been ordered for that day, in which case only two or three go out at a time.

GETTING UNDER WAY

Now the east is pink, and overhead the sky has changed from gray to pale blue. It is light enough to fly. We don our fur-lined shoes and combinations, and adjust the leather flying hoods and goggles. A lot of conversation occurs—perhaps because, once aloft, there's nobody to talk to.

"Hey, you," one pilot cries jokingly to another, "I hope some Boche just ruins you this morning, so I won't have to pay you the fifty francs you took from me last night!"

This financial reference concerns a poker game.

"You do, do you?" replies the other as he swings into his machine. "Well, I'd be glad to pass up the fifty to see you landed by the Boches. You'd make a fine sight walking down the street of some German town in those wooden shoes and pajama pants. Why don't you dress yourself? Don't you know an aviator's supposed to be chic?"

A sartorial eccentricity on the part of one of our colleagues is here referred to.

The raiillery is silenced by a deafening roar as the engines are tested. Quiet is briefly restored, only to be broken by a

series of rapid explosions incidental to the trying out of machine guns. You loudly inquire at what altitude we are to meet above the field.

"Fifteen hundred metres—go ahead!" comes an answering yell.

Essence et gaz! [Oil and gas!] you call to your mechanic, adjusting your gasolene and air throttles while he grips the propeller.

Contact! he shrieks, and *Contact!* you reply. You snap on the switch, he spins the propeller, and the engine takes. Drawing forward out of line, you put on full power, race across the grass, and take the air. The ground drops as the hood slants up before you and you seem to be going more and more slowly as you rise. At a great height you hardly realize you are moving. You glance at the clock to note the time of your departure, and at the oil gauge to see its throb. The altimeter registers 200 feet. You look back at the field below and see others leaving.

In three minutes you are at about 4,000 feet. You have been making wide circles over the field and watching the other machines. At 1,500 metres you throttle down and wait on that level for your companions to catch up. Soon the Escadrille is bunched and off for the lines. You begin climbing again, gulping to clear your ears in the changing pressure. Surveying the other machines, you recognize the pilot of each by the marks on the side—or by the way he flies. The distinguishing marks of the Nieuports are various and sometimes amusing. Bert Hall, for instance, has "Bert" painted on the left side of his plane and the same word reversed, as if spelled backward with the left hand, on the right—so that an aviator passing him on that side at great speed will be able to read the name without difficulty, he says!

The country below has changed into a flat surface of varicolored figures. Woods are irregular blocks of dark green, like daubs of ink spilled on a table; fields are geometrical designs of different shades of green and brown, forming in composite an ultra-cubist painting; roads are thin white lines, each with its distinctive windings and crossings—from which you deduce your location. The higher you are the easier it is to read.

In about ten minutes you see the Meuse sparkling in the morning light, and on either side the long line of sausage-shaped observation balloons far below you. Red-roofed Verdun springs into view just beyond. There are spots in it where no red shows and you know what has happened there. In the green pastureland bordering the town, round flecks of brown indicate the shell holes. You cross the Meuse.

VERDUN, SEEN FROM THE SKY

Immediately east and north of Verdun there lies a broad, brown band. From the Woëvre plain it runs westward to the 'S' bend in the Meuse, and on the left bank of that famous stream continues on into the Argonne Forest. Peaceful fields and farms and villages adorned that landscape a few months ago—when there was no Battle of Verdun. Now there is only that sinister brown belt, a strip of murdered Nature. It seems to belong to another world. Every sign of humanity has been swept away. The woods and roads have vanished like chalk wiped from a blackboard; of the villages nothing remains but gray smears where stone walls have tumbled together. The great forts of Douaumont and Vaux are outlined faintly, like the tracings of a finger in wet sand. One cannot distinguish any one shell crater, as one can on the pockmarked fields on either side. On the brown band the indentations are so closely interlocked they blend into a confused mass of troubled earth. Of the trenches only broken, half-obliterated links are visible.

Columns of muddy smoke spurt up continually as high explosives tear deeper into this ulcered area. During heavy bombardment and attacks I have seen shells falling like rain. The countless towers of smoke remind one of Gustave Doré's picture of the fiery tombs of the arch-heretics in Dante's Hell. A smoky pall covers the sector under fire, rising so high that at a height of 1,000 feet one is enveloped in its mistlike fumes. Now and then monster projectiles hurtling through the air close by leave one's plane rocking violently in their wake. Airplanes have been cut in two by them.

For us the battle passes in silence, the

noise of one's engine deadening all other sounds. In the green patches behind the brown belt myriads of tiny flashes tell where the guns are hidden; and those flashes, and the smoke of bursting shells, are all we see of the fighting. It is a weird combination of stillness and havoc, the Verdun conflict viewed from the sky.

Far below us, the observation and range-finding 'planes circle over the trenches like gliding gulls. At a feeble altitude they follow the attacking infantrymen and flash back wireless reports of the engagement. Only through them can communication be maintained when, under the barrier fire, wires from the front lines are cut. Sometimes it falls to our lot to guard these machines from Germans eager to swoop down on their backs. Sailing about high above a busy flock of them makes one feel like an old mother hen protecting her chicks.

"NAVIGATING" IN A SEA OF CLOUDS

The pilot of an *avion de chasse* must not concern himself with the ground, which to him is useful only for learning his whereabouts. The earth is all-important to the men in the observation, artillery-regulating, and bombardment machines, but the fighting aviator has an entirely different sphere. His domain is the blue heavens, the glistening rolls of clouds below, the fleecy banks towering above, the vague aerial horizon, and he must watch it as carefully as a navigator watches the storm-tossed sea.

On days when the clouds form almost a solid flooring, one feels very much at sea, and wonders if one is in the navy instead of aviation. The diminutive Nieuports skirt the white expanse like torpedo boats in an arctic ocean, and sometimes, far across the cloud-waves, one sights an enemy escadrille, moving as a fleet.

Principally our work consists in keeping German airmen away from our lines, and in attacking them when opportunity offers. We traverse the brown band and enter enemy territory to the accompaniment of an anti-aircraft cannonade. Most of the shots are wild, however, and we pay little attention to them. When the shrapnel comes uncomfortably close, one shifts

position slightly to evade the range. One glances up to see if there is another machine higher than one's own. Low and far within the German lines are several enemy 'planes, a dull white in appearance, resembling sand flies against the mottled earth. High above them one glimpses the mosquito-like forms of two Fokkers. Away off to one side white shrapnel puffs are vaguely visible, perhaps directed against a German crossing the lines. We approach the enemy machines ahead, only to find them slanting at a rapid rate into their own country. High above them lurks a protection 'plane. The man doing the "ceiling work," as it is called, will look after him for us.

TACTICS OF AN AIR BATTLE

Getting started is the hardest part of an attack. Once you have begun diving you're all right. The pilot just ahead turns tail up like a trout dropping back to water, and swoops down in irregular curves and circles. You follow at an angle so steep your feet seem to be holding you back in your seat. Now the black Maltese crosses on the German's wings stand out clearly. You think of him as some sort of big bug. Then you hear the rapid tut-tut-tut of his machine gun. The man that dived ahead of you becomes mixed up with the topmost German. He is so close it looks as if he had hit the enemy machine. You hear the staccato barking of his mitrailleuse and see him pass from under the German's tail.

The rattle of the gun that is aimed at you leaves you undisturbed. Only when the bullets pierce the wings a few feet off do you become uncomfortable. You see the gunner crouched down behind his weapon, but you aim at where the pilot ought to be—there are two men aboard the German craft—and press on the release hard. Your mitrailleuse hammers out a stream of bullets as you pass over and dive nose-down to get out of range. Then, hopefully, you redress and look back at the foe. He ought to be dropping earthward at several miles a minute. As a matter of fact, however, he is sailing serenely on. They have an annoying habit of doing that, these Boches.

Rockwell, who has attacked so often he has lost all count, and who shoves his machine gun fairly in the faces of the Germans, would swear their 'planes were armored. Lieutenant de Laage, whose list of combats is equally extensive, has brought down only one. Hall, with three enemy machines to his credit, has had more luck. Lufbery, who evidently has evolved a secret formula, has dropped four, according to official statistics, since his arrival on the Verdun front. Four "palms" glitter upon the ribbon of the *Croix de Guerre* accompanying his *Médaille Militaire*.

A pilot seldom has the satisfaction of beholding the result of his bull's-eye bullet. Rarely, so difficult is it to follow the turnings and twistings of the dropping 'plane, does he see his fallen foe strike the ground. Lufbery's last direct hit was an exception, for he followed all that took place from a balcony seat. I myself was in the "nigger-heaven," so I know. We had set out on a sortie together just before noon one August day, and for the first time on such an occasion had lost each other over the lines. Seeing no Germans, I passed my time hovering over the French observation machines. Lufbery found one however, and promptly brought it down. Just then I chanced to make a southward turn, and caught sight of an airplane falling out of the sky into the German lines.

As it turned over, it showed its white belly for an instant, then seemed to straighten out, and planed downward in big zigzags. The pilot must have gripped his controls even in death, for his craft did not tumble as most do. It passed between my line of vision and a wood, into which it disappeared. Just as I was going down to find out where it landed, I saw it again skimming across a field, and heading straight for the brown band beneath me. It was outlined against the shell-racked earth like a tiny insect, until just northwest of Fort Douaumont it crashed down upon the battlefield. A sheet of flame and smoke shot up from the tangled wreckage. I watched it burn a moment or two, then went back to the observation machines.

I thought Lufbery would show up and point to where the German had fallen. He failed to appear, and I began to be afraid it was he whom I had seen come down, instead of an enemy. I spent a worried hour before my return homeward. After getting back I learned that Lufbery was quite safe, having hurried in after the fight to report the destruction of his adversary before somebody else claimed him, which is only too frequently the case. Observation posts, however, confirmed Lufbery's story, and he was of course very much delighted. Nevertheless, at luncheon I heard him murmuring half to himself, "Those poor fellows!"

The German machine gun operator, having probably escaped death in the air, must have had a hideous descent. Lufbery told us he had seen the whole thing, spiraling down after the German. He said he thought the German pilot must be a novice, judging from his manœuvres. It occurred to me that he might have been making his first flight over the lines, doubtless full of enthusiasm about his career. Perhaps, dreaming of the Iron Cross and his Gretchen, he took a chance—and then swift death and a grave in the shell-strewn soil of Douaumont.

Generally the Escadrille is relieved by another fighting unit after a couple of hours over the lines. We turn homeward, and soon the hangars of our field loom up in the distance. Sometimes I've been mighty glad to see them and not infrequently I've concluded that the pleasantest part of flying is just after a good landing. Getting home after a sortie, we usually go into the rest tent, and talk over the morning's work. Then some of us lie down for a nap, while others play cards or read. After luncheon we go to the field again, and the man on guard gets his chance to eat. If the morning sortie has been an early one, we go up again about one o'clock in the afternoon. We are home again in a couple of hours and after that two or three energetic pilots may make a third trip over the lines. The rest wait around ready to take the air if an enemy bombardment group ventures to visit our territory—as they have done more than once over Bar-le-Duc. False alarms are plentiful,

and we spend many hours aloft squinting at an empty sky.

Now and then one of us will get ambitious to do something on his own account.¹ Not long ago Norman Prince became obsessed with the idea of bringing down a German "sausage," as observation balloons are called. He had a special device for setting fire to the aerial frankfurters mounted on his Nieuport. Thus equipped, he resembled an advance agent for Pain's

¹An example of "doing something on his own account" is revealed in a private letter from Mr. McConnell, written from Verdun on July 30th:

"Weather has been fine and we've been doing a lot of work. Our lieutenant—De Laage de Meux—brought down a Boche. I had another beautiful smash-up. Prince and I had stayed too long over the lines. Important day, as an attack was going on. It was getting dark and we could see the tiny balls of fire the infantry light to show the low-flying observation machines their new positions. On return, as I was over another aviation field my motor broke. I made for field. In darkness I couldn't judge my distance well and went too far. At edge of field there were trees and beyond a deep cut where road ran. I was skinning ground at 170 kilometers [about 100 miles] an hour and heading for trees. I saw soldiers running to be in at finish and I thought myself that James's hash was cooked, but I went between trees and ended up head-on on the opposite bank of road. My motor took the shock and my belt held me. As my tail went up it was cut in two by some very low 'phone wires. I wasn't bruised even. Took dinner with the officers there, who gave me a car to go home in afterwards.

"To-day I shared another chap's machine (Hall of Peekskill, who knows McCord), and got it shot up for him. De Laage, our lieutenant, and I made a sortie at noon. When in the German lines near Côte 304 I saw two Boches under me. I picked out the rear chap and dove. Fired a few shots and then tried to get under his tail and hit him from there. I missed and bobbed up alongside of him. Fine for the Boche but rotten for me. I could see his gunner working the mitrailleuse for fair, and felt his bullets darn close. I dove, for I could not shoot from that position and beat it. He kept plunking away and all together put seven holes in my machine. One was only ten inches in front of me. De Laage was too far off to get to the Boche and ruin him while I was amusing him.

"Yesterday I motored up to an aviation camp to see a Boche machine that was forced to land and was captured. The Boche machine was a beauty. Its motor is excellent and she carries a machine gun aft and one forward. Same kind of machine I attacked to-day. The German pilots must be mightily cold footed, for if the Frenchmen had aeroplanes like that they sure would raise h— with the Boches. As it is, the Boches keep well within their lines save occasionally and we have to go over and fight them there."

fireworks more than an *aviateur de chasse*. Having carefully mapped the enemy "sausages," he would sally forth in hot pursuit whenever one was signaled at a respectable height. Poor Norman had a terrible time of it! Sometimes the reported "sausages" were not there when he arrived, and sometimes there was a superabundance of German airplanes on guard.

He stuck to it, however, and finally his appetite for "sausage" was satisfied. He found one just where it ought to be, swooped down upon it, and let off his fireworks with all the gusto of an American boy on the Fourth of July. When he looked again, the balloon had vanished. Prince's performance isn't as easy as it sounds, by the way. If, after the long dive necessary to turn the trick, his engines had failed to retake, he would have fallen into the hands of the Germans.

After dark, when flying is over for the day, we go down to the villa for dinner. Usually we have two or three French officers dining with us besides our own captain and lieutenant, and so the table talk is a mixture of French and English. It's seldom we discuss the war in general. Mostly the conversation revolves about our own sphere, for just as in the navy the sea is the favorite topic, and in the army the trenches, so with us it is aviation. Our knowledge about the military operations is scant. We haven't the remotest idea as to what has taken place on the battlefield, even though we've been flying over it during an attack, until we read the papers—and they don't tell us much.

Frequently pilots from other escadrilles will be our guests in passing through our sector, and through these visitations we keep in touch with the aerial news of the day, and with our friends along the front. Gradually we have come to know a great number of *pilotes de chasse*. We hear that So and So has been killed, that some one else has brought down a Boche, and that still another is a prisoner.

We don't always talk aviation, however. In the course of dinner almost any subject may be touched upon, and with our cosmopolitan crowd one can readily imagine the scope of the conversation. A Burton Holmes lecture is weak and watery alongside of the travel stories we listen to. Were O. Henry alive, he could find material for a hundred new yarns, and William James numerous pointers for another work on psychology, while De Quincey might multiply his dreams ad infinitum. Doubtless alienists as well as fiction writers would find us worth studying. In France there's a saying that to be an aviator one must be a bit "off."

After dinner the same scene invariably repeats itself, over the coffee in the "next room." At the big table several sportive souls start a poker game, while at a smaller one two sedate spirits wrap themselves in the intricacies of chess. Captain Thénault labors away at the messroom piano, or in lighter mood plays with Fram, his police dog. A phonograph grinds out some thoroughly American ragtime ditty. It is barely nine, however, when the movement in the direction of bed begins.

A few of us remain behind a little while, and the talk becomes more personal and more sincere. Only on such intimate occasions, I think, have I ever heard death discussed. Certainly we are not indifferent to it. Not many nights ago one of the pilots remarked in a tired way:

"Know what I want? Just six months of freedom to go where and do what I want. In that time I'd get everything I wanted out of life, and be perfectly willing to come back and get killed."

Then another, who was about to receive a couple of thousand francs from the American committee that aids us, as a reward for his many citations, chimed in.

"Well, I didn't care much before," he confessed, "but now with this money coming in I don't want to die until I've had the fun of spending it."

And he yawned and went up to bed.

THE STRANGE CASE OF SYDNEY PORTER AND "O. HENRY"

NEW LIGHT ON THE LIFE OF THE QUAIN'T GENIUS WHO ROSE FROM DRUG CLERK, BOOKKEEPER, DRAFTSMAN, BANK CLERK, CARTOONIST, NEWSPAPER PARAGRAPHER, AND INNOCENT CONVICT TO BE ONE OF THE GREAT MASTERS OF THE SHORT STORY—FROM THE "O. HENRY BIOGRAPHY"

BY

C. ALPHONSO SMITH

[PROFESSOR OF ENGLISH IN THE UNIVERSITY OF VIRGINIA]

O HENRY once wrote from New York:

I was born and raised in "No'th Ca'lina" and at eighteen went to Texas and ran wild on the prairies. Wild yet, but not so wild. Can't get to loving New Yorkers. Live all alone in a great big two rooms on quiet old Irving Place three doors from Wash. Irving's old home. Kind of lonesome. Was thinking lately (since the April moon commenced to shine) how I'd like to be down South, where I could happen over to Miss Ethel's or Miss Sallie's and sit down on the porch—not on a chair—on the edge of the porch, and lay my straw hat on the steps and lay my head back against the honeysuckle on the post—and just talk. And Miss Ethel would go in directly (they say "presently" up here) and bring out the guitar. She would complain that the E string was broken, but no one would believe her; and pretty soon all of us would be singing the "Swanee River" and "In the Evening by the Moonlight" and—oh, gol darn it, what's the use of wishing.

These words, in which O. Henry almost succeeds in expressing the inexpressible, are an example of his ingrained affection for the place of his birth. A boy's life in a small Southern town immediately after the war, one phase of that life at least, was never better portrayed than these lines portray it, and whatever facts or events are to be added may best be interpreted against the background of the April moon, the porch, the honeysuckle, and the guitar with the broken E string. A few years later O. Henry said, of the novel that he hoped to write: "The 'hero' of the story will be a man born and 'raised' in a somnolent little Southern town. His educa-

tion is about a common school one, but he learns afterward from reading and life."

Had William Sydney Porter not been reared in "a somnolent little Southern town" he would hardly have developed into the O. Henry that we know to-day. He was all his life a dreamer and if the "City of Flowers" had already become the "Gate City" during his boyhood, if the wooded slopes had already been covered with the roaring cotton mills, the dreamer whose dreams were to become literature would hardly have found in the place of his birth either the time or the clime in which to develop his dream faculties.

William Sydney Porter, better known as O. Henry, was born in Greensboro, Guilford County, North Carolina, September 11, 1862. He died in New York City, June 5, 1910. Before the Porter family Bible was found, his birth year varied from 1867 to 1864, from "about the close of the war" to a question mark. There is no doubt that O. Henry used the author's traditional right to mystify his readers in regard to his age and to the unessential facts of his life. An admirer once wrote to him begging to know by return mail whether he was a man or a woman. But the stamped envelope enclosed for reply remains still unused. "If you have any applications from publishers for photos of myself," he wrote to Mr. Witter Bynner, "or 'slush' about the identity of O. Henry, please refuse. Nobody but a concentrated idiot would write over a pen-name and then tack on a lot of twaddle about himself. I say this because I am getting some letters from reviewers and magazines

wanting pictures, etc., and I am positively declining in every case."

There has thus grown up a sort of O. Henry myth. "It threatens to attain," said the New York *Sun* five years after his death, "the proportions of the Stevenson myth, which was so ill-naturedly punctured by Henley. It appears to be inevitably the fate of 'the writers' writer'—and O. Henry comes under this heading notwithstanding his work's universal appeal—to disintegrate into a sort of grotesque myth after his death. As a matter of fact Sydney Porter was, in a sort of a way, a good deal of a myth before he died. He was so inaccessible that a good many otherwise reasonable people who unsuccessfully sought to penetrate his cordon and to force their way into his cloister drew bountifully upon their imaginations to save their faces and to mask their failure."

But the O. Henry myth could not forever withstand the curiosity and inquiry begotten by the increasing acclaim that the stories were beginning to receive. O. Henry himself must have recognized the futility of attempting a further mystification, for there is evident in his later years a willingness and even a desire to throw off the mask of the assumed name and thus to link his achievement with the name and fortunes of his family. He had sought freedom and self-expression through his writings rather than fame. In fact he shunned publicity with the timidity of a child. "What used to strike me most forcibly in O. Henry," writes Mr. John H. Barry, who knew him from the beginning of his career in New York, "was his distinction of character. To those he knew and liked he revealed himself as a man of singular refinement. He had beautiful, simple manners, a low voice, and a most charming air of self-effacement. For the glory of being famous he cared little. He had a dislike of being lionized. Lion-hunting women filled him with alarm. In fact he was afraid of nearly all women." But fame had come and with it came a vein of ancestral reminiscence and a return in imagination to the days of childhood. His marriage, in 1907, to the sweetheart and the only sweetheart of the Greensboro

years, his visits to Mrs. Porter's home in Asheville, and his affectionate allusions to his father and mother show plainly a tendency to relax the cordon about him and to re-knit the ties and associations of youth. O. Henry was becoming Will Porter again.

HIS INHERITED TRAITS

William Sydney Porter was named after his mother's father, William Swaim, and his father's father, Sydney Porter. He was always called Will Porter in the early days except by his grandmother on his father's side who occasionally called him Sydney.

His grandmother, who married Lyndon Swaim after the death of her husband, William Swaim, was Abia Shirley or (Abiah Shirly), daughter of Daniel Shirley, a wealthy planter, of Princess Anne County, Virginia. "The original Abia Shirley," O. Henry once remarked to an intimate friend in New York, "was related to the House of Stuart but she ran off with a Catholic priest." Where O. Henry learned this bit of ancestral history I do not know; but that the Shirley family to which his grandmother traced her lineage was among the most loyal adherents of the Stuarts admits of little doubt.

But whether "the original Abia Shirley" was fact or fancy, it is certain that the Abia Shirley who became O. Henry's grandmother lived a gracious and exemplary life in Greensboro and bequeathed a memory still cherished by the few friends who survive her.

Her daughter was Mary Jane Virginia Swaim, O. Henry's mother. She was twenty-five years old at the time of her mother's death and married Dr. Algernon Sydney Porter three months later. Only seven years afterward she, too, died.

Whether he remembered his mother or not it would be impossible to say. Certain it is that he cherished the thought of her with a devotion and pride and sense of temperamental indebtedness that he felt for no one else, nor for all his other relatives put together. Whatever vein of quiet humor marked his allusions to the other members of his family or to his family history, his mother's name was held apart.

She was to him "a thing ensky'd and sainted." There was always an aureole about her. The poems that she wrote and the pictures that she painted—or rather the knowledge that she had written poems and painted pictures—exercised a directive and lasting influence upon him.

Lyndon Swaim gave his stepdaughter every educational advantage that Greensboro offered, and then as now no town in North Carolina offered as many to women. There were two colleges for women on old West Market Street, both very near and one almost opposite the house in which O. Henry's mother was to spend all of her short married life. She attended both schools, graduating from the Greensboro Female College in 1850, the year in which Dr. Charles F. Deems assumed control. Her graduating essay bore the strangely prophetic title, "The Influence of Misfortune on the Gifted."

THE PROGENITOR OF THE WANDERLUST

O. Henry's grandparents on his father's side were Sydney Porter and Ruth Coffyn Worth. Sydney Porter was a tall, jolly, heavy-set man but with little of the force or thrift of the family into which he married. He came from Connecticut to North Carolina about the year 1823 as the agent of a clock company.

His most characteristic trait, however, the quality that he was to transmit to his grandson, was not business efficiency. It was his sunny good humor. "He joked and laughed at his work," says an old citizen, "and was especially beloved by children."

The memory of Sydney Porter that survives is clear in outline though faint in content. From him O. Henry got also the *wanderlust* that urged him unceasingly from place to place. Clocks were never as interesting to Grandpa Porter as were the faces and places that he saw on his frequent tours. He handed down his name and a goodly share of his disposition to his grandson and, as the original rolling stone, might well typify if he did not suggest the title of the first and only periodical that O. Henry was to edit.

O. Henry's father, Dr. Algernon Sydney Porter, was the oldest of seven children.

He was born in 1825 and died in 1888. If O. Henry received from his mother his gift of repartee, his artistic temperament, and a certain instinctive shyness, he received from his father his sympathy with all sorts and conditions of men, his overflowing generosity, his utter indifference to caste, in a word a large share of his characteristic and ineradicable democracy. To the same source may also be ascribed, through association at least, some of O. Henry's constructive ingenuity.

* * * *

During his early years O. Henry cared little for indoor games and sports. In chess he could hold his own with the veterans of the town before he had reached his 'teens, and in roller-skating he won the championship prize. He was also a good boxer and a trained fencer. But his favorite recreation was to roam the fields and woods with a congenial companion.

An outing with a set purpose was never to his liking. His pleasure was in merely being in the woods or on the bank of a stream, in surrendering himself to the mood rather than to the purpose of the occasion, and in interpreting in waggish ways everything said or done or seen. He was always shy, his exuberant humor and rare gift of story-telling seeming to take flight within the walls of a house. He preferred the front gate or, as a halfway station, the porch. Even in a small group out of doors, if there was a stranger or one uncongenial companion, O. Henry would not be heard from. But the next day he would tell you what happened and with such a wealth of original comment and keenness of insight and alchemy of exaggeration, all framed in a droll or dramatic story, that you would think you had missed the time of your life in not being present.

"His education is about a common school one," said O. Henry of himself in the words already cited, "but he learns afterward from reading and life." His teacher and his only teacher was his aunt, Miss Evelina Maria Porter, known to every one in Greensboro as Miss Lina. Hers was undoubtedly the strongest personal influence brought to bear on O. Henry during his twenty years in North Carolina. The death of his mother when

he was only three years old and the increasing absorption of his father in futile inventions resulted in Miss Lina's taking the place of both parents, and this she did not only with whole-souled devotion but with rare and efficient intelligence.

O. Henry attended no other school and he attended this only to the age of fifteen. He was always a favorite with Miss Lina and with the other pupils. The gentleness of his disposition and his genius for original kinds of play won his schoolmates while his aunt held up his interest in his books, his good deportment, and his skill in drawing as worthy of all emulation. Miss Lina taught drawing, but O. Henry's sketches were almost from the start so far superior to hers that they were generally selected as the models. Some of his best free-hand sketches Miss Lina never saw, though she deserves the credit of having inspired them. She had a way of sending the arithmetic class to the blackboard while she paced the floor with the bundle of switches. O. Henry would work his "sum" with his right hand and sketch Miss Lina with his left at the same time.

I have often thought that Miss Lina must have been in O. Henry's thought when he wrote those suggestive words about Azalea Adair in "A Municipal Report":

She was a product of the old South, gently nurtured in the sheltered life. Her learning was not broad, but was deep and of splendid originality in its somewhat narrow scope. She had been educated at home, and her knowledge of the world was derived from inference and by inspiration. Of such is the precious, small group of essayists made. While she talked to me I kept brushing my fingers, trying, unconsciously, to rid them guiltily of the absent dust from the half-calf backs of Lamb, Chaucer, Hazlitt, Marcus Aurelius, Montaigne, and Hood. She was exquisite; she was a valuable discovery. Nearly everybody nowadays knows too much—oh, so much too much—of real life.

But when O. Henry's boyhood friends recall him it is not usually as a pupil in Miss Lina's school; nor is it as the writer in the great city. It is as the clerk in his uncle Clark Porter's drug store on Elm Street, opposite the old Benlow Hotel. Here he was known and loved by old and

young, black and white, rich and poor. He was the wag of the town, but so quiet, so unobtrusive, so apparently preoccupied that it was his pencil rather than his tongue that spread his local fame.

DRUG CLERK

His five years in his uncle's drug store meant much to him as a cartoonist. His feeling for the ludicrous, for the odd, for the distinctive, in speech, tone, appearance, conduct, or character responded instantly to the appeal made by the drug store constituency. This store was the rendezvous of all classes, though the rear room was reserved for the more elect. The two rooms constituted in fact the social, political, and anecdotal clearing house of the town. The patronage of the grocery stores and dry-goods stores was controlled in part by denominational lines, but everybody patronized the drug store. It was also a sort of physical confessional. The man who would expend only a few words in purchasing a ham or a hat would talk half an hour of his aches and ills or those of his family before buying twenty-five cents' worth of pills or a ten-cent bottle of liniment. When the ham or the hat was paid for and taken away there was usually an end of it. Not so with the pills or the liniment. The patient usually came back to continue his personal or family history and to add a sketch of the character and conduct of the pills or liniment. All this was grist to O. Henry's mill.

His reading at this time as well as his drawing had begun to widen and deepen. At first he had been gripped by the dime novel. After the dime novel came the supernatural story, and, before leaving Greensboro, O. Henry had passed to the stage represented in his own statement: "I used to read nothing but the classics." In fact, his reading and his close confinement in the drug store had begun to threaten his health. His mother and grandmother had both died of consumption and O. Henry, never robust, was under the obsession that he had already entered upon his fateful inheritance.

The release came unexpectedly. Three sons of Dr. James K. Hall, Lee, Dick, and

Frank, had gone to Texas to make their fortunes. They were tall, lithe, blond, iron-sinewed men, and all had done well. Lee, the oldest of the three, had become a noted Texas Ranger.

In March, 1882, Dr. and Mrs. Hall were planning to visit them. O. Henry at this time had a hacking cough and Dr. Hall used to wince as if struck whenever he heard it. "Will," he said, a few days before starting on the long trip, "I want you to go with us. You need the change, and ranch life will build you up."

If O. Henry could have chosen the ranch and the ranch manager that he was to visit in Texas he could not have done better than to choose the ranch in La Salle County that had Lee Hall at its head. He was to see much more of Dick Hall than of Lee, but it was Lee's personality and Lee's achievement that opened the doors of romance to him in Texas and contributed atmosphere and flavor to the nineteen stories that make up his "Heart of the West."

O. Henry was to remain on the La Salle County ranch for two years. Next he found himself in Austin, the county seat of Travis and the capital of Texas. Dick Hall had moved to a new ranch in Williamson County, which forms the northern boundary of Travis County, and O. Henry had decided to give up ranch life and to live in Austin. Here he remained until October, 1895, when he went to Houston as reporter for the Houston *Daily Post*.

HIS FIRST JOB IN TEXAS

The first paying position that O. Henry held in Austin was that of bookkeeper for the real estate firm of Maddox Brothers & Anderson. He worked here for two years at a salary of a hundred dollars a month. "He learned bookkeeping from me," said Mr. Charles E. Anderson, "and I have never known any one to pick it up with such ease or rapidity. He was number one, and we were loath to part with him." Mr. Anderson persuaded O. Henry to live with him after his resignation as bookkeeper, and Mr. John Maddox offered him the money to go to New York and study drawing, but O. Henry declined.

In the meantime, Dick Hall had been

elected Land Commissioner of Texas and O. Henry applied for a position under him. "The letter of application," said Mrs. Hall, "was a masterpiece. Nothing that I have since seen from his pen seemed so clever. We kept it and re-read it for many years, but it has mysteriously disappeared." Dick replied that if O. Henry could prepare himself in three months for the office of assistant compiling draftsman, the position would be given him. "It was wonderful how he did it," said Dick, "but he was the most skilful draftsman in the force."

LOVE AND MARRIAGE

But the happiest event of O. Henry's life in Texas came on July 5, 1887, when he married Miss Athol Estes, the seventeen-year-old daughter of Mrs. G. O. Roach. It was a case of love at first sight on O. Henry's part, but he deferred actual courtship until Miss Athol had finished school. Mr. and Mrs. Roach, however, entered a demurrer on the score of health. Miss Athol's father had died of consumption, as had O. Henry's mother and grandmother. But the young lovers were not to be denied. An elopement was instantly planned and romantically carried out. Borrowing a carriage from Mr. Charles E. Anderson, they drove out at midnight to the residence of Dr. R. K. Smoot, the Presbyterian minister in whose choir they both sang. Mr. Anderson was dispatched to the Roach home to sue for peace. Forgiveness was at last secured and O. Henry never had two stauncher friends than Mr. and Mrs. Roach. In the darkest hours of his life their love for him knew no waning and their faith in him neither variableness nor the shadow of turning.

To the manner of his marriage O. Henry occasionally referred in later years and always with the deepest feeling and the tenderest memory. The moonlight drive under the trees, the borrowed carriage, the witticisms on the way, the parental opposition, the feeling of romantic achievement, the courage and serenity and joy of the little woman at his side, his own sense of assured and unclouded happiness for the future—these came back to him touched with pathos but radiant and hallowed in the retrospect.

O. Henry found in his married life not only happiness but the incentive to effort that he had sorely lacked. It was an incentive that sprang from perfect congeniality and from the ambition to make and to have a home. Mrs. Porter was witty and musical. She was also stimulatingly responsive to the drolleries of her husband. She cooperated with him in his sole journalistic venture and helped him with the society items of the *Houston Daily Post*. If the thought of her did not shape the character of Della in "The Gift of the Magi" it might have done so. She did not live to see him become famous but, if she had, she would have been the first to say "I told you so." It is certainly no accident that the year of his marriage is also the year in which he begins to rely on his pen as a supplementary source of income.

The four years in the General Land Office were the happiest years of O. Henry's life in Texas. The work itself was congenial, he found time for drawing, his co-workers in the office were his warm personal friends, and his occasional contributions for jokes, squibs, sketches, etc., could be counted upon whenever necessary to help out the family larder. There was born to him also at this time a daughter, Margaret Worth Porter, whom the proud parents journeyed twice to Greensboro to exhibit and whose devotion to her father was to equal, though it could not surpass, that of the father to his only child.

WRITING FOR A LIVING

But a change was imminent. Dick Hall ran for governor of Texas in 1891 but by a close margin was defeated by James Hogg. His term as Land Commissioner had expired, and, on January 21 O. Henry resigned his position as assistant compiling draftsman and entered the First National Bank of Austin as paying and receiving teller. The change, as will be seen, was to prove a disastrous one, the only rift in the cloud being that the new position was to widen his range of story themes and to force him to rely wholly upon his pen for a living. He had hitherto coquetted with his real calling, using it, in Scott's words, "as a staff, not as a crutch,"

as a buffet lunch rather than as a solid meal. Early in December, 1894, he resigned his position in the bank but not until he had begun to edit a humorous weekly which he called *The Rolling Stone*.

The first issue of *The Rolling Stone* appeared in Austin on April 28, 1894, and the last on April 27, 1895. It can hardly be said to have flourished between these dates: it only flickered.

In July, 1895, O. Henry decided to accept a call to Washington, D. C. His household furniture was sold by way of preparation and he was on the eve of starting when Mrs. Porter became ill. The doctors found that the long-dreaded blow had fallen. She had consumption. O. Henry was unwilling to leave her or to attempt so long a journey with her. He continued, therefore, his contribution of odds and ends to newspapers and in October was writing chiefly for the *Plain Dealer*, of Cleveland, O., but hoping in the meanwhile to secure a more permanent position nearer home.

CARTOONIST, POET, AND PARAGRAPHER

The opportunity came when Col. R. M. Johnston offered him a position on the *Houston Daily Post*. Mrs. Porter was not well enough at first to accompany her husband to Houston but in a little while she was pronounced much better and joined him. Prospects were brighter now than they had been since his resignation from the General Land Office. The *Post* was one of the recognized moulders of public opinion in the Southwest and O. Henry's work gained for it new distinction.

"He became," said an editorial in the *Post* at the time of O. Henry's death, "the most popular member of the staff." "As a cartoonist," continues the *Post*, "Porter would have made a mark equal to that he attained as a writer had he developed his genius; but he disliked the drudgery connected with the drawing and found that his sketches were generally spoiled by any one else who took them to finish. In the early days he illustrated many of his stories. Those were days before the present development of the art of illustration, whether for magazine or newspaper, and he did most of the work on chalk, in which

the drawing was made, a cast of lead being afterward made with more or less general results of reproducing the drawing in the shape of printing. The generality of the result was at times disheartening to the artist and Porter never followed his natural knack for embodying his brilliant ideas in drawings." His salary was quickly raised from fifteen to twenty-five dollars a week and he was advised by Colonel Johnston to go to New York, where his talents would be more adequately rewarded.

O. Henry's first column appeared in the *Post* on October 18, 1895, his last on June 22, 1896.

ARRESTED FOR EMBEZZLEMENT

When he left Houston, never to return, he left because he was summoned to come immediately to Austin and stand trial for alleged embezzlement of funds while acting as paying and receiving teller of the First National Bank of Austin. The indictments charged that on October 10, 1894, he misappropriated \$554.48; on November 12, 1894, \$299.60; and on November 12, 1895, \$299.60.

Had he gone he would certainly have been acquitted. He protested his innocence to the end. "A victim of circumstances" is the verdict of the people in Austin who followed the trial most closely. Not one of them, so far as I could learn after many interviews, believed or believe him guilty of wrongdoing. It was notorious that the bank, long since defunct, was wretchedly managed. Its patrons, following an old custom, used to enter, go behind the counter, take out one hundred or two hundred dollars, and say a week later: "Porter, I took out two hundred dollars last week. See if I left a memorandum of it. I meant to." It must have recalled to O. Henry the Greensboro drug store. Long before the crash came, he had protested to his friends that it was impossible to make the books balance. "The affairs of the bank," says Mr. Hyder E. Rollins, of Austin, "were managed so loosely that Porter's predecessor was driven to retirement, his successor to attempted suicide."

There can be no doubt that O. Henry boarded the train at Houston with the

intention of going to Austin. I imagine that he even felt a certain sense of relief that the charge, which had hung as a dead albatross about his neck, was at last to be unwound, and his innocence publicly proclaimed. His friends were confident of his acquittal and are still confident of his innocence. If even one of them had been with O. Henry, all would have been different. But when the train reached Hempstead, about a third of the way to Austin, O. Henry had had time to pass in review the scenes of the trial, to picture himself a prisoner, to look into the future and see himself marked with the stigma of suspicion. His imagination outran his reason, and when the night train passed Hempstead on the way to New Orleans, O. Henry was on it.

His mind seems to have been fully made up. He was not merely saving himself and his family from a public humiliation, he was going to start life over again in a new place. His knowledge of Spanish and his ignorance of Honduras made the little Central American republic seem just the haven in which to cast anchor. How great the strain was can be measured in part by the only reference of the sort, so far as I know, that O. Henry ever made in his life to the little Latin American country: "The freedom, the silence, the sense of infinite peace, that I found here, I cannot begin to put into words." His letters to Mrs. Porter from Honduras show that he had determined to make Central America his home, and that a school had already been selected for the education of his daughter.

How long O. Henry remained in New Orleans, on his way to or from Honduras, is not known; long enough, however, to draw the very soul and body of the Crescent City into the stories that he was to write years afterward. With his usual *flair* for originality, he passes by Mardi Gras, All Saints' Day, *Quatorze Juillet*, and *Crevasses*; but in "Whistling Dick's Christmas Stocking," "The Renaissance of Charleroi," "Cherchez La Femme," and "Blind Man's Holiday," he has pictured and interpreted New Orleans and its suburbs as only one who loved and lived the life could do.

It is probable that he merely passed through New Orleans on his way to Honduras and took the first available fruit steamer for the Honduran coast, arriving at Puerto Cortes, or Criba, or Trujillo. At any rate he was in Trujillo and was standing on the wharf when he saw a man in a tattered dress suit step from a newly arrived fruit steamer. "Why did you leave so hurriedly?" asked O. Henry. "Perhaps for the same reason as yourself," replied the stranger. "What is your destination?" inquired O. Henry. "I left America to keep away from my destination," was the reply; "I'm just drifting. How about yourself?" "I can't drift," said O. Henry; "I'm anchored."

The stranger was Al Jennings, the leader of one of the most notorious gangs of train robbers that ever infested the Southwest of the United States.

IN SOUTH AMERICA

When he and O. Henry met at Trujillo Mr. Jennings was still frankly a fugitive outlaw. He and his brother Frank had chartered a tramp steamer in Galveston, and the departure had been so sudden that they had not had time to exchange their dress suits and high hats for a less conspicuous outfit. Mr. Jennings and his brother had no thought of continuing their career of brigandage in Latin America. They were merely putting distance between them and the detectives already on their trail. O. Henry joined them and together they circled the entire coast of South America. This was O. Henry's longest voyage and certainly the strangest. When the money was exhausted, "Frank and I," says Mr. Jennings, "decided to pull off a job to replenish the exchequer. We decided to rob a German trading store and bank in northern Texas, and I asked Porter if he would join us. 'No,' he said, 'I don't think I could.' 'Well, Bill,' I said, 'you could hold the horses, couldn't you?' 'No,' said Porter, 'I don't think I could even hold the horses.'"

O. Henry's letters to Mrs. Porter came regularly after the first three weeks.

He had a hard time but his messages were cheerful and hopeful and full of affection. Mrs. Porter, not knowing how

long they would be separated, planned to do something to earn some money. She commenced taking a course in a business college, but ill health interfered. When Christmas came she made a point lace handkerchief, sold it for twenty-five dollars, and sent her husband a box containing his overcoat, fine perfumery, and many other delicacies.

He did not know till a month later that this box was packed by Mrs. Porter when her temperature was 105. As soon as he learned it, he gave up all hope of a Latin-American home and started for Austin, determined to give himself up and to take whatever medicine fate or the courts had in store for him. He passed again through New Orleans, and, according to the trial reports, arrived in Austin on February 5, 1897. His bondsmen were not assessed, but the amount of the bond was doubled and O. Henry went free till the next meeting of the Federal Court.

All of his time and thought were now given to Mrs. Porter. When she was too weak to walk O. Henry would carry her to and from the carriage in which they spent much of their time. His *wanderlust* seemed stilled at last and these days of home-keeping and home-tending were happy days to both, though they knew that the end was near. Mrs. Porter had been almost reared in the Sunday-school and the neighbors say that it was a familiar sight on Sunday mornings, in the last spring and summer, to see O. Henry and his wife driving slowly beneath the open windows of the Presbyterian Church. Here they would remain unseen by the congregation till the service was nearly over. Then they would drive slowly back. Each service, it was feared, might be the last. The end came on July 25th.

CONVICTED THOUGH INNOCENT

After many postponements O. Henry's case came to trial in February, 1898. He pleaded not guilty but seemed indifferent. "I never had so non-communicative a client," said one of his lawyers. "He would tell me nothing."

One error in the indictment was so patent that it is hard to understand how it could have gone unchallenged. He

was charged, as has been stated, with having embezzled \$299.60 on November 12, 1895, "the said W. S. Porter being then and there the teller and agent of a certain National Banking Association, then and there known and designated as the First National Bank of Austin." Nothing in O. Henry's life is better substantiated than that on November 12, 1895, he was living in Houston and had resigned his position in the Austin bank early in December, 1894. And yet the reader will hardly believe that this flagrant inconsistency in the charge against him has remained to this moment unnoticed. The foreman of the grand jury and the foreman of the trial jury are reported to have regretted afterward that they had voted to convict. "O. Henry was an innocent man," said the former, "and if I had known then what I know now I should never have voted against him." As the contradiction in time and place was not one of the things that either foreman learned later, one cannot help asking what it was that led to conviction.

The answer is easy. O. Henry lost his case at Hempstead, not at Austin. "Your Grand Jurors," so runs the charge, "further say that between the days the sixth (6th) of July A. D. 1896 and the fifth (5th) of February A. D. 1897 the aforesaid W. S. Porter was a fugitive and fleeing from justice and seeking to avoid a prosecution in this court for the offense hereinbefore set out." This was true and the humiliation of it and the folly of it were so acutely felt by O. Henry that he remained silent. I think it unlikely that he noticed the impossible date, November 12, 1895, for a more dateless and timeless man never lived.

The jury rendered its verdict of guilty on February 17, 1898, and on March 25, O. Henry was sentenced to imprisonment in the Ohio Penitentiary at Columbus for the period of five years. Immediately after being sentenced he wrote from the jail in Austin the following letter to his mother-in-law, Mrs. G. P. Roach:

DEAR MRS. ROACH:

I feel very deeply the forbearance and long suffering kindness shown by your note, and thank you much for sending the things. Right

here I want to state solemnly to you that in spite of the jury's verdict I am absolutely innocent of wrongdoing in that bank matter, except so far as foolishly keeping a position that I could not successfully fill. Any intelligent person who heard the evidence presented knows that I should have been acquitted. After I saw the jury I had very little hopes of their understanding enough of the technical matters presented to be fair. I naturally am crushed by the result, but it is not on my own account. I care not so much for the opinion of the general public, but I would have a few of my friends still believe that there is some good in me.

O. Henry entered the penitentiary on April 25, 1898, and came out on July 24, 1901. On account of good behavior his term of confinement was reduced from five years to three years and three months. There was not a demerit against him.

HIS LIFE IN PRISON

When O. Henry passed within the walls of the Ohio prison he was asked, "What is your occupation?" "I am a newspaper reporter," he replied. There was little opportunity for that profession in that place, but the next question may be said to have saved his life: "What else can you do?" "I am a registered pharmacist" was the reply, almost as an afterthought. The profession which he loathed in Greensboro because it meant confinement was now, strangely enough, to prove the stepping-stone to comparative freedom. His career as a drug clerk in the prison, his fidelity to duty, the new friendships formed, the opportunity afforded him to write, and his quick assimilation of short story material from the life about him are all set forth in the testimony of those who knew him during these years of seeming eclipse.

Dr. John M. Thomas was then chief physician at the prison. His letter is especially interesting for the light that it throws on the origin of the stories contained in "The Gentle Grafter":

Druggists were scarce and I felt I was fortunate in securing the services of Sydney Porter, for he was a registered pharmacist and unusually competent. In fact he could do anything in the drug line. Previous to his banking career in Texas he had worked in a drug store in North Carolina, so he told me. While

Porter was drug clerk Jimmie Considine, one time proprietor of the old Hotel Metropole in New York, was a muse. Considine spent all his time painting. Out of this came a falling out with O. Henry. Considine painted a cow with its tail touching the ground. Porter gave a Texas cowman's explanation of the absurdity of such a thing and won Considine's undying hatred.

After serving some time as drug clerk O. Henry came to me and said: "I have never asked a favor of you before but there is one I should like to ask now. I can be private secretary to the steward outside [meaning that he would be outside the walls and trusted]. It depends on your recommendation." I asked him if he wanted to go. When he said he did, I called up the steward, Mr. C. N. Wilcox, and in twenty minutes O. Henry was outside.

He did not associate very much with any of the other inmates of the prison except the Western outlaws. Very few of the officers or attendants at the prison ever saw him. Most convicts would tell me frankly how they got into jail. They did not seem to suffer much from mortification. O. Henry, on the other hand, was very much weighed down by his imprisonment. In my experience of handling more than ten thousand prisoners in the eight years I was physician at the prison, I have never known a man who was so deeply humiliated by his prison experience as O. Henry. He was a model prisoner, willing, obedient, faithful. His record is clear in every respect.

It was very seldom that he mentioned his imprisonment or in any way discussed the subject. One time we had a little misunderstanding about some alcohol which was disappearing too rapidly for the ordinary uses to which it was put. I requested that he wait for me one morning so that I could find out how much alcohol he was using in his night rounds, and after asking him a few questions he became excited when he thought I might be suspicious of him. "I am not a thief," he said, "and I never stole a thing in my life. I was sent here for embezzling bank funds, not one cent of which I ever got. Some one else got it all, and I am doing time for it."

You can tell when a prisoner is lying as well as you can in the case of anybody else. I believed O. Henry implicitly. I soon discovered that he was not the offender in the matter of the alcohol. But the question disturbed him and he asked me once or twice afterward if I really thought that he ever stole anything.

Once in a long while he would talk about his supposed crime and the great mistake he made in going to Central America as soon as there was

any suspicion cast on him. When he disappeared suspicion became conviction. After his return from Central America, when he was tried, he never told anything that would clear himself. While he was in Central America he met Al Jennings, who was likewise a fugitive from justice. After they returned to the States they renewed their friendship at the prison, where both eventually landed. Jennings was also one of the trusted prisoners and in the afternoon they would often come into my office and tell stories.

O. Henry liked the Western prisoners, those from Arizona, Texas, and Indian Territory, and he got stories from them all and retold them in the office. Since reading his books I recognize many of the stories I heard there. As I mentioned before, he was an unusually good pharmacist and for this reason was permitted to look after the minor ills of the prisoners at night. He would spend two or three hours on the range or tiers of cells every night and knew most of the prisoners and their life stories.

"The Gentle Grafter" portrays the stories told him on his night rounds. I remember having heard him recount many of them. He wrote quite a number of short stories while in prison and it was a frequent thing for me to find a story written on scrap paper on my desk in the morning, with a note telling me to read it before he sent it out. We would often joke about the price the story would bring, anything from twenty-five to fifty dollars. He wrote them at night in from one to three hours, he told me.

OUT INTO LIFE AGAIN

O. Henry's letters from prison tell their own story. The life was intolerable at first but he lived in constant expectation of a pardon. When this hope failed he turned all the more wholeheartedly to story writing. His endorsement by Dr. Thomas, in October, 1900, to a position in the steward's office was evidently a turning point in his life and was so recognized by him. It is needless to say, as the letters show, that Margaret did not know where her father was. From the moment of his sentence O. Henry's chief concern was that she should never know. And she did not know till he told her face to face.

When he passed out of the prison walls of Columbus, he was a changed man. Something of the old buoyancy and wagghiness had gone, never to return. He

was never again to content himself with random squibs or jests contributed to newspapers or magazines. Creation had taken the place of mere scintillation. Observation was to be more and more fused with reflection. He was to work from the centre out rather than from the circumference in. The quest of "What's around the corner" was to be as determined as before but it was to be tempered with a consciousness of the under-side of things. The hand that held the pen had known a solemnizing ministry and the eye that guided it had looked upon scenes that could not be expunged from memory.

There are men, says O. Henry, in one of his vivid characterizations, to whom life is "a reversible coat, seamy on both sides." His had been seamy on only one side: the inner side was still intact. The dream and the vision had remained with him. He had suffered much but the texture of life still seemed sound to him. There was no sense of disillusionment. No friend had failed him; no friend ever failed him. So far from losing interest in life, he was rather rededicated to it. Nothing so testifies to the innate nobleness of O. Henry's nature as the utter absence of bitterness in his disposition after the three years in Columbus. These years had done their work but it was constructive, not destructive. His charity was now as boundless as the air and his sympathy with suffering, especially when the sufferer was seemingly down and out, as prompt and instinctive as the glance of the eye.

The first step in putting the past irrevocably behind him was to write under an assumed name. The pen-name of O. Henry may have been thought of while he was in New Orleans; it may have been suggested by the names found in a New Orleans daily, the *Times-Democrat* or the *Picayune*. O. Henry, I believe, is reported to have said as much. But the evidence is that he did not adopt and use the name until he found himself in prison. When the S. S. McClure Company wrote to him about "The Miracle of Lava Canyon" he had been out of New Orleans nearly a year and was never to see the city again, but he was addressed as W. S.

Porter and the story was published as W. S. Porter's. On April 25, 1898, the day on which he arrived in Columbus, the S. S. McClure Company wrote to him in Austin, addressing him as Sydney Porter. It was his first change of signature and was adopted in the month between his conviction and his commitment. It was also the name to be engraved upon his visiting cards in New York. But after reaching Columbus, not before, he took the pen-name O. Henry and kept it to the end.

One of the most interesting odds and ends found among O. Henry's belongings is a small notebook used by him in prison. In it he jotted down the names of his stories and the magazines to which he sent them. It is not complete, the first date being October 1, 1900. It contains, therefore, no mention of "Whistling Dick's Christmas Stocking," which appeared in *McClure's Magazine* for December, 1899, or of "Georgia's Ruling," to which he alludes in a letter to Mrs. Roach. Of the stories now grouped into books, these two were the first written. The stories listed in the prison notebook and now republished in book form are, in chronological order, "An Afternoon Miracle," "Money Maze," "No Story," "A Fog in Santone," "A Blackjack Bargainer," "The Enchanted Kiss," "Hygeia at the Solito," "Rouge et Noir," "The Duplicity of Hargraves," and "The Marionettes."

These twelve stories, three of which were picked as among O. Henry's best in the plebiscite held by the *Bookman*, June, 1914, show a range of imagination, a directness of style, and a deftness of craftsmanship to which little was to be added. In the silent watches of the night, when the only sound heard was "the occasional sigh or groan from the beds which were stretched before him in the hospital ward or the tramp of the passing guard," O. Henry had come into his own. He had passed from journalism to literature. He had turned a stumbling-block into a stepping-stone. And his mother's graduating essay, "The Influence of Misfortune on the Gifted," written a half century before, had received its strangest and most striking fulfilment.

THE LIFE OF James J. Hill

Written with his approval and from exclusive access to his personal papers by his friend,

JOSEPH GILPIN PYLE

"At this time the ultimate ambition of Mr. Hill in a business way was the amassing of the sum of one hundred thousand dollars. It is his own statement of the goal of his ambition then. But he realized that there was little hope that a young man, however great his ability and diligence, could amass one hundred thousand dollars in a few working years by acting as agent for anybody."

II. MAKING A FORTUNE IN RIVER FREIGHT AND FUEL

HIS SHARE IN MANY KINDS OF ENTERPRISES—ROMANCE AND MARRIAGE—A BATTLE WITH THE HUDSON'S BAY COMPANY FOR THE RED RIVER TRADE—THE FATEFUL MEETING WITH DONALD A. SMITH, WHO AFTERWARD BECAME LORD STRATHCONA—ADVENTURES ON THE FROZEN PRAIRIE

DURING the first ten years of Mr. Hill's life in St. Paul he was going through his business schooling, just as he had learned to know and use his mind under Wetherald. When it has been said that he was a clerk in the office of the agents of the Dubuque & St. Paul Packet Company from 1856 to 1858, went from them to the Davidson line of steamboats and remained with it till 1865, when he was appointed agent of the Northwestern Packet Company, the bald statement covers in such few lines the facts of swift and interesting years. Even then Mr. Hill was rapidly constructing the foundation upon which he was to build directly for ten years thereafter; and in a broader sense, for those more familiar and splendid years to follow. For this man's ultimate success was in no lightest particular an accident. Only a superficial view can fail to appraise the merit and fix the place of the forty years of life to which Mr. Hill had served a stern apprenticeship before he seized the great opportunity and launched

the enterprise that was to create a new industrial empire and make him one of the foremost figures of his time.

The following news items, gleaned from the daily papers of these years, typical of many others not quoted, are the completest and the most suggestive biographical sketch of his manner of activity during this period:

James J. Hill has secured the contract for furnishing the Government with 15,000 bushels of oats at fifty-eight cents a bushel. As we have remarked before, Jim Hill has a habit of securing things when he goes after them.

James J. Hill beats all his competitors when it comes to making the very lowest rates on freight shipments to all points east and south. His valuable services became recognized by the various rail and water transportation companies, and he is now the sole agent of the Northwestern Packet Company, the Milwaukee Prairie du Chien Railway, and the Illinois Central Railway. Mr. Hill is also a dealer in salt, coal, cement, lime, etc., and keeps always on hand a large supply of those articles. Besides being a hustler for business, he is an agree-

able and honorable gentleman with whom it is an honor to deal. He also guarantees that all freight for points east and south addressed in care of Jas. J. Hill will be transferred at the levee free of charge. This saves five cents per hundred pounds to the shipper.

Navigation having closed and the steamboat business being thus wound up, J. J. Hill has, with a spirit of enterprise which is commendable, converted his immense warehouse into a mammoth hay pressing establishment. If he cannot handle freight he can press hay, and it is a noticeable fact that when Mr. Hill starts to accomplish a thing he does it complete and single-handed, asking no aid from any one. He says that all hay offered will be taken, and if his present warehouse is not large enough there is plenty of lumber to build others, and plenty of vacant land to erect them upon. This remarkable young man evidently intends to keep abreast of the times.

A PARTNERSHIP AGREEMENT

Within a year from the time when he ceased to be a shipping clerk, he had made a partnership agreement with Blanchard & Wellington, of Dubuque, for conducting a general transportation, commission, and storage business. It is interesting to find, in the details of this contract, an evidence of the previous thrift of the young fellow and a measure of his business expectations. Blanchard & Wellington were officials of the Northwestern Packet Company, and Dubuque the official centre of the upper Mississippi business. They put \$5,000 into the deal, and Hill put in \$2,500—no small sum for an employee to have got together in the little Minnesota town in those days. Hill was to draw out \$1,500 for living expenses, and to have profits up to \$3,000 if they should amount to so much. The terms express the confidence of these veteran river men in their young associate. So does their correspondence with him during the life of this arrangement. One of the Packet Company's representatives was coming to St. Paul to look things over, and Mr. Wellington writes to Mr. Hill: "I have told him whatever you agreed to or told him he could rely upon." Not only a sweeping endorsement, but rather unusual advance information to impart to an associate still, in a sense, on trial.

In connection with his river business, and

his interest in the trade of the Red River country, of which we are yet to hear, he concluded now the most momentous business relation of all: an arrangement with the First Division of the St. Paul & Pacific Railway Company, that formless creation of enterprise and speculation and greed which he was one day to subdue to his own hand and to the uses of half a continent. His own words explain exactly what this adjunct to his other work was:

I acted as agent for the St. Paul & Pacific Railway Company in St. Paul. This began in the spring of 1866. I handled the freight by the ton and by the carload under a contract. I built a warehouse, or it might be said I extended their station—built an addition to it two hundred feet long and about sixty wide—in which I received freight from steamboats on the Mississippi River destined to other points, and local freight to St. Paul, and did any business that I might have to do in connection with these boats, giving the preference as to room to the business of the railway company. The floor upon which the boats delivered their freight was a story below the station, on a level with the car tracks. That arrangement was to save drayage. A large portion of the business was to St. Anthony and Minneapolis; and, prior to the construction of that warehouse, steamboats unloaded on the public levee, and freight was drayed to the railway at an expense of from sixty cents to a dollar a ton. Adding the cost of draying it from the station at St. Anthony to the merchants' stores, it would have been about as cheap to haul the freight direct by team from one point to the other. The railroad was anxious to have this arrangement made for landing freight directly from steamboats into the warehouse. There was no charge made as agent or forwarder on any freight handled by me going over the railway.

MARRIAGE TO MISS MEHEGAN

Thus had business progress gone up to and through the year 1866. In far different fashion the next year was to be the most momentous of his life. For if Mr. Hill had been asked, at the summit of his career, by any one intimate enough to put the question and receive an answer, what had been its supremest good fortune, he would have declared it unhesitatingly to be the marriage that took place in 1867.

Among the young women of the little town was one, Mary Theresa Mehegan by

name, whose attractiveness had not passed unnoticed by the struggling young fellow now beginning to think of a home of his own. She was of Irish blood, like himself. Her father, Timothy Mehegan, of Cork, Ireland, and her mother, Mary McGovern, of County Leitrim, Ireland, were married in New York in 1844. In 1847 they removed to Chicago, and 1850 went on to St. Paul. Mary Mehegan was their second child. Miss Mehegan was a sensible, high-principled girl, of no better fortune than his own in those days of struggle, dependent on her own exertions for her living, and gifted with a character which subsequent fortune might polish to a higher finish but to which it could impart no element of either strength or grace that it did not already possess. Between the two a deep attachment was soon formed. About four years they had known each other, but neither then nor afterward did Mr. Hill ever wear his heart upon his sleeve, and the depth of this attachment had been unsuspected. The young people, after Miss Mehegan's return from Milwaukee, where she had been attending a convent school, went quietly to the bishop's residence of the Cathedral Parish in St. Paul, on August 19, 1867, where Father Oster made them man and wife. They went immediately to live in a small but comfortable home on Canada Street, near Pearl, now called Grove Street. It was a convenient location, in a good neighborhood—the Rev. John Mattocks lived next door—and there they remained for about four years. It was a busy and a happy time. Mr. Hill was already in comfortable circumstances, and he had at that time a very good library of his own. "He never," said Mrs. Hill, "brought his business home." Then and later, in small affairs as in great, that was a sanctuary from which all but the gentler and more sacred relations were excluded.

AN IDEAL FAMILY LIFE

This was one of those perfect unions of which the world hears little because of their completeness. Through small things and great, Mrs. Hill became and remained the ideal wife and mother. To her husband she gave ten children, seven girls and three boys, all of them reared with democratic

plainness and with thorough preparation for a life of work. All except one daughter were living at the date of Mr. Hill's death. There is no woman of highest or most ancient lineage in the land who can surpass Mrs. Hill in dignity and grace. She carried all the honors which the years brought to her with a rare and beautiful simplicity. Every social duty was fulfilled quietly and without ostentation. Her charities have been many and generous. The transition from the narrow life of the earlier years to the wealth and position that came so quickly and with such great contrasts was made without a jar; as it can be made only by those upon whom Nature herself has bestowed a patent of nobility.

No one can ever estimate the strength, the courage, the happy power to dare and to do that James J. Hill drew through all those unblemished years from his domestic life. He paid publicly to this influence a tribute so simple and so convincing that it should have permanent place in the record of his life:

One of his largest benefactions was the establishment and endowment of a seminary for the education of students preparing for the Roman Catholic priesthood. When this seminary was dedicated and presented to the Church authorities, Mr. Hill, at the close of his presentation speech, used these words, words that were expressive of the deepest feeling of his heart and the greatest fact of his life:

Some of you may wonder why I, who am not a member of your Church, should have undertaken the building and endowment of a Roman Catholic Theological Seminary, and you will pardon me if I tell you plainly why. For nearly thirty years I have lived in a Roman Catholic household, and daily I have had before me and around me the earnest devotion, watchful care, and Christian example of a Roman Catholic wife of whom it may be said, "Blessed are the pure in heart, for they shall see God." On her behalf I desire to present and turn over to the illustrious Archbishop of this diocese this seminary and its endowment.

The Hudson's Bay Company was a name to conjure with in those days. In the very year when Mr. Hill was born it succeeded in obtaining a new lease of power. For twenty-one years from that date it had the

sole right of the fur trade in Canada; and this was, of course, equivalent to a monopoly of every form of trade, for at some stage in every transaction furs became the medium of exchange and decided its terms. Long before the date when this monopoly was to expire, opposition to it had become fierce, and the evasion of its regulations a delightful as well as a profitable occupation. The "free traders" had sprung up, whose business it was to carry on outside of the Hudson's Bay Company the same traffic in which it was engaged. Their merchandise had to be brought in by the same routes, and their peltries carried out to the same markets. It was in taking care of this portion of the business of Norman W. Kittson (of whom more is to be heard later on, but who was now one of the important agents in St. Paul for the forwarding of supplies to the "free traders" in the portion of Rupert's Land lying about Lake Winnipeg) that Mr. Hill first became familiar with the Red River country, first essayed its resources and gauged its future possibilities.

Of course, the Hudson's Bay Company, after its legal monopoly expired, could not prevent a man's trading on his own account if he wanted to try. So the "free traders" did a growing business. They so far won their way that there was little effort after 1858 to enforce the alleged but no longer legally guaranteed exclusive rights of the Hudson's Bay people.

A MIGHTY COMPETITOR

Now the very existence of this competition compelled the big monopoly, in its own defense, to seek the shortest and quickest route into and out of the country. In 1859, its managers were induced to try taking in supplies for Fort Garry by way of St. Paul and the Red River. The experiment was so satisfactory that in 1861 they put on the Red River of the North a small steamer for their own trade. They took an old river craft named the *Anson Northrup*, which had done service on the upper Mississippi, pulled her to pieces, carried the parts over the prairies to the northern stream, put them together there, and called the craft the *Pioneer*. She plied between Fort Abercrombie, in North Dakota, and Fort

Garry. From St. Paul the supplies for the Canadian Northwest were conveyed by wagon to such point on the Red River as was most convenient for the season's navigation, be it Fort Abercrombie or another, loaded on the steamboat, and carried down to Lake Winnipeg and to all the settlements within reach of the river valley. By another year the experiment had grown so successful that a larger boat was needed, and the *International* was added in 1862.

It was in connection with this traffic that James J. Hill acquired that knowledge of the fertile Northwest which was to be the foundation of his great empire-building conception; familiarized himself personally with the country, its needs and its transportation possibilities; and first came into direct contact, one after another, with the group of men who were, fifteen years later, to follow his lead in what seemed, to the prudent and the knowing, the maddest venture ever launched even in that day of many chimeras and transparent frauds. One of these men, who connect the second and third acts in the life of Mr. Hill, here comes upon the scene.

NORMAN W. KITTSOON

Norman W. Kittson was born in Sorel, Lower Canada, in 1814, entered the fur trade as an employee of the American Fur Company when he was sixteen years old, and had engaged in the same business on his own account just above Fort Snelling, at the junction of the Mississippi and Minnesota rivers, a few miles above St. Paul, in the spring of 1834. "Commodore" Kittson, as he came to be called afterward, mastered the fur trade, went into real estate in the new settlement, became a member of the Minnesota legislature and mayor of St. Paul, and was thus well known throughout the new country. During all these years he had engaged more or less actively in the Red River trade, and in 1860 he was made agent of the Hudson's Bay Fur Company for that business. By this time the St. Paul merchants were supplying practically all the goods sent into the country to the northwest of them. He was the general forwarding agent; and it was he who first put on the Red River the steamboats just mentioned.

Mr. Hill, it will be remembered, was, from 1865 onward, in the forwarding business himself. He had a big hand in the river trade. He had his new freight house on the levee. There he handled the stuff that came up by water, and that which came over the little ten-mile railroad down from St. Anthony, afterward Minneapolis. He knew all about this northwestern traffic, every pound of which passed under his nose. Mr. Kittson, before becoming the Hudson's Bay Company's agent, had acted for the free traders. He did not throw them over. The business was profitable; and while he was absent for a time in 1863 and 1864 he selected Mr. Hill, the rising young traffic man, to look after it. About 1866 he found that he must give up one branch of the business or the other; so he turned over the agency for the free traders to Mr. Hill, who had now become thoroughly familiar with details. They included the carrying out from the Red River country of furs and skins; the filling of orders for supplies from outside, covering everything from boxes of Bibles to kegs of whiskey, the two being not infrequently included in the same individual order; and the taking of these up into the settlement. It was not an enterprise of great magnitude, but one requiring energy, knowledge of details, and familiarity with the country and its conditions. Thus the area of Mr. Hill's operations was extended somewhat in the direction of his earlier fancies; and thus he was introduced to the field which was to be filled, a little later, with stirring events.

At this time the ultimate ambition of Mr. Hill in a business way was the amassing of the sum of one hundred thousand dollars. It is his own statement of the goal of his ambition then. But he realized that there was little hope that a young man, however great his ability and diligence, could amass one hundred thousand dollars in a few working years by acting as agent for anybody.

"COMMODORE" DAVIDSON

Mr. Hill, as has been seen, took the agency of the Northwestern Packet Company's line of steamers on the Mississippi River in the year 1865. A year later he entered into the partnership described with

Blanchard & Wellington. But in 1867 this line was merged with the competing company of "Commodore" Davidson. The latter was one of those rough and ready, tireless pioneers who are out to get business and mean to have it. There was just enough resemblance between the two men in their imperiousness and intolerance of opposition to make it reasonably certain that they would not remain long in the same boat. Young Hill had his superior officer gauged quite accurately. He sums him up in a letter of the time, showing his already keen judgment of men: "As long as the old man thinks he can ride, he will ride; but when he is forced to go afoot, none so pleasant as he."

HIS GIFT OF FAR-SIGHTEDNESS

So by 1867 Mr. Hill was in the game on his own account, had secured his contract with the St. Paul & Pacific Railway Company for supplying it with fuel, and was fully launched upon a general transportation and fuel business. This was the substratum on which rested the multifarious activities of the next ten years.

At this time, 1867, he himself could not have told what occupation would eventually claim his entire allegiance.

Already one characteristic which was to differentiate him from others, and contribute to his most remarkable achievements, the gift of the clear look forward, was in evidence. Whenever Mr. Hill considered any enterprise in a practical way or contemplated taking any share in it whatever, he immediately proceeded to throw a mental stereopticon view of it upon the screen and study its probable aspect after the lapse of half a century. Then he knew whether it contained for him any practical use or attractiveness. His mainsail was always trimmed to catch the breeze of tomorrow. First he planted himself firmly on facts; the exact facts, all the facts. Then he applied to them his powerful, constructive imagination. For example, he was one of the first to appreciate the extent and value of the coal deposits of Iowa; and some years later the gentlemen who needed them were amazed to find 2,300 acres of valuable coal lands in one county of the state held under lease by James J. Hill.

He had read every book on the subject, visited every locality within reach where coal could be obtained, questioned travelers and prospectors, commissioned others to get information for him. In 1872, with a practical geologist, he explored the little-known Turtle Mountain country for coal.

Mr. Hill had obtained, in 1866, a contract from the old St. Paul & Pacific Railway Company, of which a great deal will be heard presently, to furnish it with fuel. Another agreement had been made early in 1866 between Mr. Hill and the railroad company for the handling of the company's freight at St. Paul and the eventual transfer of it to the warehouse he had built. This was to last for a year only; but when the partnership with Litchfield (of which more later) was formed, it was extended to 1874. The fulfilment of it was no sinecure. Mr. Hill saw personally to the carrying out of its provisions. He says: "For many years I bought woodland and cut the wood." He took the land from the company, supplied it with fuel for its locomotives, and marketed the surplus in St. Paul and Minneapolis. At the same time there was the immense detail of the shipping business, by both river and rail, to be looked after.

From the first it was undoubtedly the transportation side of his business that interested him most, however important the other may have been then as a resource, or later as an asset, in the carrying out of larger undertakings. His first business partnership, entered into under the name of J. J. Hill & Co., was formed in 1867 with Egbert S. Litchfield. In 1869 the partnership became Hill, Griggs & Co., formed to carry on a general business in wood, coal, and commission. Mr. Hill had bought out the Litchfield interest, and the new firm took it over, being capitalized at \$25,000.

LIGHTNING CHANGES IN PARTNERS

The firm and business changes of the next few years are lightninglike. The warehouse, the river trade, the agency for the Red River buyers, the fuel contract with the railroad, the fuel business in St. Paul, and the storage, forwarding, and commission business—surely here were enough activities to keep a man hustling and to in-

volve him in many firm combinations. The articles of incorporation of Hill, Griggs & Co. are dated August 20, 1869. Hill was to look after the transportation end; Griggs after the wood and coal end, and a separate partnership agreement was made the year following with one De Witt C. Kinsey, for the purpose of "carrying on a merchandising and transportation business on the Red River of the North." Also another side partnership agreement was made in 1870 with another Griggs—Alexander, who knew boats like a book—to cover the building and operation of a steamboat on the Red River. Then there was a pooling of interests with one Armstrong, who also had a contract for the transportation of wood over the one railroad of the town. Mr. Hill left no loose ends showing if he could help it, and the merger idea is by no means the newest thing under the sun.

HIS PENCHANT FOR TRANSPORTATION

The gross earnings of Hill, Griggs & Co. ran from \$40,000 to \$65,000 a year, a big business for St. Paul. The firm lasted until May 1, 1875, when Mr. Hill bought out the Griggs interest. Immediately the Northwestern Fuel Company was established to conduct the business. It had to be done now without the direct participation and control of Mr. Hill himself. For before this date he had made his definite choice. More and more the transportation business had come to appeal to him personally. More and more the great idea, the great possibility in connection with it that had occurred to him, absurd, chimerical, but dazzling and insistent, obsessed him. By 1878, when this idea was materializing into one of the most splendid facts in the history of American development and the constructive genius of American railroading, the fuel interest was cut out altogether. Control of the Northwestern Fuel Company was sold to other parties, and Mr. Hill vanishes from the fuel business except as the expert on coal supplies and coal values whose authority nobody in the Northwest was able to dispute satisfactorily.

The boy who had exulted in the first load of freight over the iron rails into and out of St. Paul had glimpsed a finality. He

hitched his wagon to the new régime. When he struck out for himself, the real assets of J. J. Hill & Co. were their share of the Red River business and their contract with the railroad.

Up in the North there was a flourishing trade, originating back in the early days of the Selkirk settlement, that could as yet be handled only by team and boat. Some day it would be a bonanza to a traffic agency yet to be called into being. Meanwhile there was good money in it. Hence he put his capital and enterprise largely into the transportation business for the Red River country. Henceforth this was to be his study and his inspiration, while the other interests of the firm were looked after more and more by his partners and associates.

This venture at the outset was, in effect, an invasion of the territory of the domineering and all-powerful Hudson's Bay Company, which brooked no competition in its own domain. But the far-seeing young fellow saw that he must fight for what he would win. His one little boat, with a few barges, made ready for business. Once let him get his nose under the tent of this business and, like the camel, he trusted to himself to try conclusions with the proprietor.

By 1871 Mr. Hill had a regular through line for both passengers and freight established to Winnipeg, running on fixed tariff schedules. A good share of all the business of this new country was now passing through his hands.

The boat and barges were operated one season by Mr. Hill's firm, and their competition was severely felt. Next year a joint arrangement was made between the firm and Mr. Kittson, who owned the other boat on the Red River and was building a second, and who decided, from his experience, that it would pay better to consolidate than to fight. The agreement, dated January 19, 1872, between N. W. Kittson and Hill, Griggs & Co., was concluded "for the better accommodation of said transportation and to enable them to reduce expenses of maintaining and operating their boats for the same." Kittson had the steamer *International*, another boat building near Breckenridge, and a barge.

Hill, Griggs & Co. had the *Selkirk* and a barge. The consolidated concern was called the Red River Transportation Line, and Kittson, at first, was to be manager. "The tariff for freight and passengers shall not be less," says the agreement, "than one dollar and fifty cents per one hundred pounds freight and eight dollars for each passenger between Moorhead and Fort Garry, or Winnipeg." The Hudson's Bay Company had a special contract at one dollar a hundred for its business. A year or two later still, Mr. Hill and Mr. Kittson together bought out the interest of Hill, Griggs & Co. in this line, and then the two men formed the Red River Transportation Company, most of whose stock they held between them. All the transportation interests on the Red River were brought together in the Red River Transportation Company.

The business interests of Mr. Hill in the Red River country, now increasing every year, had been reinforced by a personal experience and adventure whose influence upon the plans and decisions of the future it would perhaps not be easy to overestimate. This was a visit in person to Winnipeg, during which he received impressions that were to dominate the next twenty years of his life, and became acquainted with one of the men who were intimately associated with him in later years, in the purchase of the railroad that brought him wealth and fame.

RIEL'S REBELLION

A combination of circumstances had suggested the desirability of a visit by Mr. Hill to the settlements of the Northwest with which he was conducting this extensive and growing business. As is always the case with trade at long range, there were many outstanding accounts which required the presence of somebody to collect or secure them. The country was in a state of great confusion owing to the outbreak of what is known as "Riel's Rebellion." The half-breed settlers around Fort Garry had been alarmed by the transfer to the Dominion of Canada, created in 1869, of the territorial rights of the Hudson's Bay Company. The old authority they knew; they looked on the new with

suspicion and distrust. They believed their holdings threatened and their agreements with the company endangered. In October, 1869, Louis Riel, the turbulent leader of these Metis, or half-breeds, met the new governor, the Hon. William McDougall, about twenty-five miles out of Winnipeg, and compelled him to return to the American boundary. In November his followers captured Fort Garry. In December they set up a provincial government, with Riel as president. It was desirable that some one from St. Paul who knew the people should make the trip and size up the situation. There was a personal reason in the fact that Governor McDougall had come through St. Paul with several letters of introduction from Canadian friends of Mr. Hill. Everybody believed the crisis to be more serious than it actually proved. But there was no doubt that it needed personal investigation.

The task of spying out the new land was accepted joyfully by Mr. Hill.

FIRST JOURNEY TO WINNIPEG

In the spring of 1870, about the middle of March, Mr. Hill set out from St. Cloud, going to that point by rail and thence by stage to a place called Burns, about one hundred miles to the west. There it was necessary to take a dog train and go through by way of Pembina to Fort Garry. The whole journey was one of adventure and hardship. Under date of April 17, 1870, a St. Paul paper published the following news item:

Mr. J. J. Hill, who left here for Fort Garry, is having a strenuous experience, together with his stage companions, in forcing their way through the huge snow drifts which have recently fallen in that district. At one place the driver, agent, and passengers had to shovel their way for over twenty miles. Several nights they were compelled to lie out, and they were compelled to send a man in on foot to bring back a fresh team, as the one they had was completely exhausted. At Old Corner Mr. Hill bought a dog train and proceeded on his journey.

Judge Malmros, of St. Paul, who met Mr. Hill on this trip, said: "Mr. Hill has a splendid team of dogs, the best that could be found anywhere, and was getting on capably. The dog sledges are flat-bottomed, like a log slab, with the forward end curved upward, and are eight or nine feet long and from twelve to fourteen

inches wide, being some two inches narrower at the rear."

Several days out from his starting point the traveler was overtaken by one of the severe snow-and-wind storms common to the country at this season. The dogs lost the trail and wandered in circles, and their master was for a time perilously near death. Just as night fell he blundered upon a little cabin where warmth and food could be had. It was an experience not uncommon in the early life of the Northwest, but it came near to changing the history of the country. Up and back again it was hard going; over the unmarked prairie, along the barely discernible watercourses, camping or chancing upon a lonely cabin or wigwam by the way.

The trade situation in the North proved less troublesome than had been feared. Whether the British or the half-breeds were in the saddle, business was brisk. Furs had to go out, supplies had to come in; and domestic necessities took little heed of political complications. But the horizon of the young man who had made the trip from St. Paul, and was to make it again and again, in the face of every kind of hardship, in the next few years, was vastly widened. He spied out the land for himself. He was always gathering facts and thinking, silently thinking, of the opportunities scattered here so lavishly for the foresighted and the energetic. Why not for him as well as another? He rode up and down on his steamboat. He tired out the captain and the engineer with questions. He knew every piece of wood and metal in her, and how to take them apart and put them together if necessary. He hobnobbed with the settlers, and did not forget to cultivate the acquaintance of those who could give destiny a push. On his return from one of these early trips to Winnipeg, he met Donald A. Smith.

Of this second of his three associates in his approaching great enterprise—Kittson being the first—passing note must be made. As Lord Strathcona and Mount Royal he was to become an imperial figure in later times, preserving his vigor and adding to his honors after he had passed ninety years. Donald A. Smith, a Scotchman by birth, came over to this country, like many of his nation, to try his fortune at an early

age. He arrived in Canada, at the age of 18 years, in 1838, the same in which Mr. Hill was born. He was first a clerk in the employ of the Hudson's Bay Company and for thirteen years was stationed in Labrador, where he roughed it in that inhospitable wilderness. At the end of this apprenticeship he was transferred to a post on Hudson's Bay, where he remained for ten years, rising to the position first of chief trader and then of chief factor. In 1868, having proved himself, he was made

"The nearest house behind him was one hundred and forty miles away, and I had stayed the evening before at the frontier house of the Hudson's Bay Company of which he was the chief executive." They stopped, made themselves known to each other, and interchanged the courtesies of the frontier. It was an interview charged with momentous consequences. "I liked him then," said Sir Donald Smith, a quarter of a century afterward, "and I have never had reason to change my opinion." Mr.



From the collection of Mr. E. A. Bromley

A RED RIVER WINTER TRAIN FROM FORT GARRY

Under the date of April 17, 1870, a St. Paul paper says: "Mr. J. J. Hill, who left here for Fort Garry, is having a strenuous experience with his stage companions in forcing their way through huge snowdrifts. At one place the driver, agent, and passengers had to shovel their way for over twenty miles. Several nights they were compelled to lie out, and they were compelled to send a man in on foot to bring back a fresh team, as the one they had was completely exhausted."

resident-governor for the Company, with headquarters at Montreal. The next year came the Riel Rebellion, and the new Dominion needed a strong and capable man to handle the situation. The Government sent Mr. Smith to Fort Garry as special commissioner. It was while there that the fateful crossing of trails brought about his first meeting with Mr. Hill.

It is curious to look back, through the perspective supplied by our knowledge of after events, upon this apparent accident. Mr. Smith was traveling out of Fort Garry, which he had left on March 19, 1870, by dog team over the great wastes of snow. Mr. Hill was traveling toward Fort Garry in the same manner. Each man had heard of the other, and the solitudes of Nature are evocative of human friendliness. "We met on the prairie," says Mr. Hill.

Hill was to know later the value of this friend in the great transaction in which they both engaged, and was to inspire him with practical faith in another dream that was realized in the building of the Canadian Pacific. If it could be ascertained, that spot on the prairie is worth some permanent memorial.

Each man impressed the other as a character of force, and each stored away in his mental notebook his impression of the stranger for future reference. Mr. Smith rose rapidly in place and honors. He dealt with the Riel disturbance diplomatically. Nothing more was possible than to quiet the minds of the people, so that when the inevitable military suppression of the uprising should come, as it did in the summer of 1870, it would usher in a permanent peace instead of a temporary truce. So



From the collection of Mr. E. A. Bromley

DONALD A. SMITH (LATER LORD STRATHCONA) IN 1856

At the time of his meeting with Mr. Hill, Mr. Smith was acting as special commissioner of the Canadian Government to Fort Garry to investigate the Riel Rebellion. "I liked him then," said Mr. Smith, speaking of his first meeting with Mr. Hill, who later became his associate in business, "and I have never had reason to change my opinion."

well did he acquit himself that he was elected to the first legislative assembly of Manitoba from the city of Winnipeg in 1870, and to the Dominion House of Commons in 1871. In the same year he was made Chief Commissioner. He, too, was acquiring knowledge and making powerful friends, both of which were to find place and use in the scheme already haunting the days and nights of James J. Hill, to emerge as a plan of action a few years later.

The preliminary events which may well have made these two men measure each other with speculative and approving eyes, and which had already advised the Hudson's Bay Company that it must be prepared to deal with a new force in the Northwest, are just as interesting when observed from the other side of the Red River firing line.

They are related as follows by Beckles Willson, in his "Life of Lord Strathcona:"

The nearest point to Manitoba touched by a railroad was the town of Brainerd, in the state of Minnesota, which was the terminus of the Northern Pacific Railway. Between St. Cloud and the Red River the brigades of carts continued to make trips for the purpose of transporting the supplies demanded for the inhabitants of the province. The only steamer navigating the waters of the Red River was the *International*, belonging to the Hudson's Bay Company, which carried only the Company's goods. But suddenly an American steamer, the *Selkirk*, appears, heavily freighted with merchandise for the province. This circumstance alone would not have contributed to the complete breakdown of the cartage system; but it appeared that, according to American law, all goods passing through American territory intended for Canada were required to be duly bonded in the United States Customs. This law had been practically a dead letter so far as the Red River carts were concerned, but the promoter of the new steamship enterprise had found means to induce the American Government to enforce it. The result was that, having himself taken the precaution of entering bonds, and as neither the cart brigades nor the Hudson's Bay Company's steamer *International* had complied with the law, the newcomer for a brief space enjoyed a handsome and lucrative monopoly. It is interesting to recall that the tariff levied from St. Paul to Winnipeg was sixteen shillings sterling per one hundred pounds. Moreover, it was payable in cash, whereas the freight by carts had been payable half in cash, half in kind, a practice which considerably lessened the actual freight charges.

When Mr. Smith heard of this proceeding he was for a moment nonplussed. But with his surprise was mingled considerable admiration for the shrewdness displayed by his trade antagonist in this exploit. "He must be a very able man," said he to a friend, afterward his successor as Commissioner. Then he added, "We must not be caught napping."

The promptness of the Commissioner's measures must have convinced the owner of the *Selkirk* that he had met his match in shrewdness. The steamer *International* was instantly transferred to the Company's agent at St. Paul, Mr. N. W. Kittson, who was an American citizen. In this capacity he secured her bonding, and now, instead of carrying merely Company goods, he announced the steamer as ready to transport general freight and passengers. Moreover, the moment the Manitoba merchants heard of the arrangement, they gave the preference to the

new pseudo-American boat, and a powerful competition thus sprang up. But it was not destined to last long. Mr. Smith and his rival from over the border, Mr. Hill, met for the first time. A coalition was suggested and agreed to, and Mr. Kittson was appointed manager of the new steamboat company.

Mr. Hill had foreseen and worked toward exactly the end that was afterward accomplished. It was a foretaste of surprises and victories won many a time in later years in the railroad world. He had meant to break into the Red River trade. It had a future, whereas he perceived that the Mississippi traffic had none. In that territory and at that time there was no rival whom it appeared so hopeless to compete with as the all-powerful Hudson's Bay Company, with its resources, its arrogance, and its almost immemorial ascendancy over the people and the commerce of the upper half of the North American Continent. A practically unknown young man, with a capital of but a few thousand dollars, had set the trap and baited it. The result was the formation of the Red River Transportation Company, consolidating the steamboat interests on the Red River. Says Mr. C. W. Griggs, Mr. Hill's partner, in an interview published in 1893: "I do not think at that time that Mr. Hill's available capital exceeded two or three hundred thousand dollars." That figure is probably in excess of the true amount, since it will be seen later on that, six years later, Mr. Hill had to put at stake everything he had in the world for the payment to be made on his railroad option.

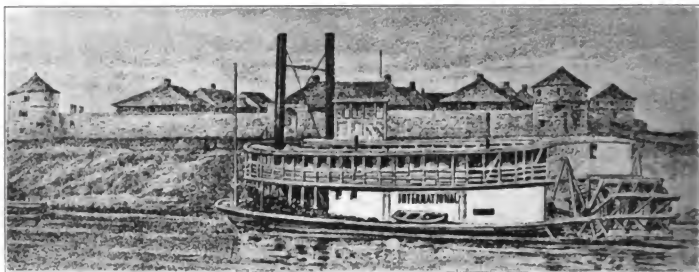
Whatever the exact amount of his resources at this time, and they were small in any event, they had to carry the fuel business, the storage and forwarding business, the fuel supply contract with the railroad company, the explorations into coal deposits and lands in the new country, and the building and operation of the Red River craft. It was almost as competent financing as some of the big deals of years to come, where hundreds of millions were involved. The freight and passenger business of the steamboats increased rapidly. Immigrants began to pour into the Northwest, and the Red River valley was their objective point.



From the collection of Mr. E. A. Bromley
"COMMODORE" NORMAN W. KITTSON

One of the big men of business in early St. Paul. At first he acted as agent of the "Free Traders" but later became agent for the Hudson's Bay Company, turning over the affairs of the Free Traders to Mr. Hill—"the rising young traffic man," as he called him, who was later destined to become his partner

James J. Hill was by this time a familiar figure in the public as well as the business life of St. Paul. In 1869 he was unanimously chosen president of the Democratic county convention. And in 1871 his name appears among the Democratic nominees for alderman of St. Paul. He was a man of note and activity in his community; and it is curious, in this connection, that as yet he had not formally adopted the new citizenship. His naturalization papers are of record in the Clerk's office of the District Court of Ramsey County, in which St. Paul is situated, bearing date of October 18, 1880. Evidently he had made no previous declaration of intention, because a search of the records of the Clerk of the State Supreme Court and those of the Clerk of the United States District Court fails to reveal any such entry. The affidavit of 1880 is filled out in Mr. Hill's own handwriting. He



From the collection of Mr. E. A. Bromley

THE "INTERNATIONAL"

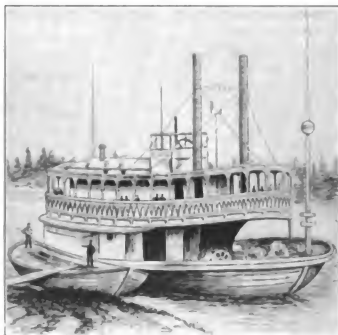
Of the Hudson's Bay Company's fleet on the Red River. After a brief traffic war in 1871, the *International* was added to the *Selkirk* and some smaller boats, and they henceforth constituted the fleet of the Red River Transportation Line, most of the stock of which was owned by James J. Hill and Norman W. Kittson.

declares on oath that he had been a resident of this country the required number of years, and that during all this time had intended to become a citizen. This

declaration took the place of "first papers," having been made legal in 1878. It is clear that Mr. Hill had regarded himself as so thoroughly identified with the United States that he, like many others at that time, put off and forgot an act which, to them all, seemed a useless formality. His relation to a great business enterprise under American law made it material that this form should be complied with. But for many years before that Mr. Hill, though always devotedly attached to the land of his birth and to his kinsmen across the sea, was as thoroughly an American citizen in heart and feeling as if all the laws and all the courts had so declared it.

A dramatic incident from the vivid and picturesque life of that old day has been preserved in the words of Mr. Hill himself. It serves as a reproduction of the

time. It is worth recording for its own sake, also, as a specimen of descriptive relation by a man who, to the end of his life, held the "Pilgrim's Progress" to be a model of the best English style:



THE "SELKIRK"

Operated on the Red River by Hill, Griggs & Company in competition with the Hudson's Bay Company's steamer, *International*

I remember my first trip out of North Dakota. I had slept up at Tongue River, in the northern part of the state, and it was a nice, gray, misty morning. Soon after daylight we started. I was on horseback and had a halfbreed or a breed-and-a-half for a guide, and he had a cart and an extra pony. I know that I fell asleep on horseback, and the horse awoke me by snorting. I looked ahead, and in the fog, sitting on a knoll, was a wolf. I thought that wolf was bigger

than a horse. He got up, looked over his shoulder at me, loped away, and I haven't seen him since.

That afternoon it turned cold. There was a grove on the head waters of Turtle River, and as it grew colder and the wind was from the northwest and kept picking up little pebbles and throwing them at me, I thought I would go into that grove and camp, and we would have some wood to make a fire. When we got there the

little stream had frozen to the bottom and the water was running over the ice. It was April, the water had backed up, there was a lot of slushy ice, and there was no place to rest, not a dry spot in the grove. In going out of it and getting across the stream my breed-and-a-half had to lift on the cart wheel. I got over all right with the saddle horse and went back and took hold of the bridle of the black mare hitched to the cart, and he put his shoulder in under the spoke of the wheel, made an extra effort and the wheel came around and struck his arm and dislocated it; just knocked it out. He spoke some Indian which I didn't understand, and he had some knowledge of French, such as it was.

We moved down to where the water was four or five feet deep, and the banks were rather high on both sides, and the wind was howling from the northwest. There we camped. We had no tent, but we had a piece of canvas which we put over the shafts of the cart, and under that

we got through the night. Our ponies were hobbled; they wanted to get under cover with us and keep us company, but there wasn't room for all of us.

The next day I had to set the man's arm and I did it. Down below there were some box alder trees growing. No breakfast that morning. But we got down there and saw those box alders. Two or three had dead limbs on them, and of these we made a fire and boiled a kettle of water. I took the axe and cut a box alder stick about five or six inches in diameter, with a crotch or fork at one end. I took my underclothes and bound them in a roll and put it under the man's arm and got him under the cart with a stick between his legs. I put the fork against this, cut a notch in the end, and let the rope twist in through the notch and back to the wheel. Then I got a stick or standard out of the cart, and took a twist on the rope so that the same power that hauled his arm ahead



From the collection of Mr. E. A. Bromley

THE STATION OF THE ST. PAUL & PACIFIC RAILWAY COMPANY

In the spring of 1866 "I acted as agent," says Mr. Hill, "for the St. Paul & Pacific Railway Company"—that formless creation of enterprise and speculation and greed which he was one day to subdue to his own hand and to the uses of half a continent

pressed through the fork on the notches and pushed the end of the stick down tight. I took care to sit across him. I had his head under the cart. I felt reasonably certain that there would come a time when it would become necessary for me to keep him in that position. I gave him a stick to hold, and he thought that possibly if he let go of the stick he would be able to let go of the rope; but I had several turns of it around his wrist. When I got a good strain on him he began to yell; but I kept going until I felt that the bone pressed into its place. I got him out from under. He found that the joint was back. Through the night he was a little delirious, and he tried to have me take two of the best horses and said he would take the worst one and try to make the trip back to his home. If he didn't, he said his father would take care of his wife and children, but that it was more important for me to get back.

But I had set his arm, and that is about the only successful surgical operation I ever performed. As soon as I got the horse hitched up and our things in the cart and was ready to start, he wanted to say his prayers. He was a very devout fellow and had a little bit of a French prayer book. Some of the missionaries had given it to him, or maybe his mother. At any rate he got it out and wanted to say his prayers, and I wanted to give him an opportunity; but at the same time I was ready to go on, and suggested in the best way I could that if he would repeat after me I could do the work more quickly than he could, probably. I remember I commenced at the beginning and went through the various services: marriage service, christening of children, baptism, and burial of the dead. I remember I took a line at the top and one in the middle and sometimes one at the bottom. I got through the entire prayer book, I think, in less than twenty minutes. He felt that he had done the biggest day's work of his life. He had

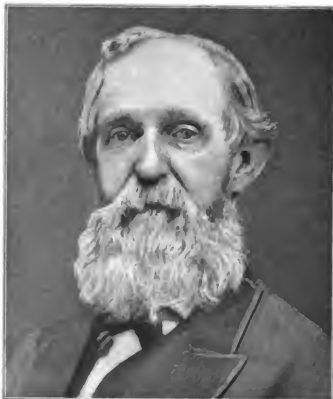
gone through his prayers and he was very faithful and good.

Presently we got down to Goose River, where the old trail crossed, and it was evening. We wanted to get across, because there was a little timber on the other side and we could get in there for shelter. I wore moccasins and my underclothing and, perched on the withers of that black mare, I started to ford. The cold weather had stopped the running of the water to

some extent, and there was a little ice; maybe fifteen or twenty feet on each side, and a black stream of water in the middle. It was a hard crossing. Down near Georgetown I was crossing again on ice which looked as though it might be all right. All of a sudden it gave way, and as I didn't know how deep the water was, I had occasion to think of all the good things and all the bad things I had ever done between the time I started down and when I struck ground, with the water reaching to my vest pockets. It was hard work getting back to the ice again. The ice kept breaking as I tried to clamber out; but at last I got on to a small pile of earth heaped up by a beaver when the water was not so

high, and by that help was able to get up again and continue to Georgetown.

The journeys to Fort Garry and back were a dividing line between epochs in the life of James J. Hill. They broke the routine of ordinary business in St. Paul, which was never thereafter to constitute the first interest of his life. The physical man, fitted by Nature to confront her hardest moods, and the mind that had something of the old berserker daring, tenacity, and contempt of opposition were matched for a time against the wildest aspects of the storm-swept plains of the Northwest and the rage of its winter cli-



From the collection of E. A. Bromley

"COMMODORE" WILLIAM F. DAVIDSON

"One of those rough and ready, tireless pioneers" whose competing trading company was merged with that of Mr. Hill in 1867. "There was just enough resemblance between the two men in their imperiousness and intolerance of opposition to make it reasonably certain that they would not remain long in the same boat." At the end of the year, they had separated



From the collection of Mr. E. A. Bromley

A HUDSON'S BAY COMPANY TRANSPORT

"The Hudson's Bay Company was a name to conjure with in those days. In the very year when Mr. Hill was born it succeeded in obtaining a new lease of power. For twenty-one years from that date it had the sole right of the fur trade in Canada . . . and this was equivalent to a monopoly of every form of trade, for at some stage in every transaction furs became the medium of exchange and decided its terms"

mate. The knowledge of the country and its potential resources that had been accumulating for years was reinforced by minute personal observation. The man and the opportunity had come into actual contact. The wire and the dynamo were connected. Energy began to gather and to

flow toward the point where its appointed work was waiting.

[The next chapter of Mr. Pyle's narrative, to be published in the *WORLD'S WORK* for December, tells how Mr. Hill acquired the St. Paul & Pacific Railway, the foundation of his great railroad system.—THE EDITORS]



From the collection of E. A. Bromley

RED RIVER CARTS AT ST. PAUL

"Long before the date of the Hudson's Bay Company's monopoly of the fur trade was to expire, opposition to it had become fierce and the evasion of its regulations a delightful as well as a profitable occupation." It was in taking care of the business of these free traders that Mr. Hill first became familiar with the Red River country, first essayed its resources and gauged its future possibilities

ONE OF THE UNITED STATES ARMY TRAINING AIRPLANES

Until recently the best machine available in the United States. A good airplane for training purposes but inadequate for active service in the field



A NEW EPOCH IN OUR MILITARY

HOW AVIATION HAS TAKEN ON A NEW IMPETUS IN THE UNITED STATES—THE LESSONS FOR MAKING THE AVIATION SERVICE IN

AT THE beginning of the European war France stood out in the public mind far ahead of every other nation in the world in the field of airplane progress. The French had developed the best engine, the best plane, and the best fliers up to that time. And yet at the beginning of the war France was forced to scrap all its machines and ideas and start again. The same situation holds true to-day in the United States that held true in France in 1914 and for the same reason. When France started in the war there had been no governmental control of the airplane industry.

Every manufacturer had been allowed to work out his own theory of aviation without col-

laborating with any of his competitors or seeking the best solution of aerial defense in war. The result was that when hostilities began a champion flyer who had always flown the machine of one manufacturer was unable to fly the machine of another manufacturer because of the many differences of control. To the layman this may seem a simple obstacle to overcome, but the fact that the slightest wrong move on the part of an aviator may bring him plunging a thousand feet to his death shows that this one point is as essential as any in the use of airplanes in war. As a result, France was forced to adopt a standard method of airplane control and to teach many of its best aviators all over again. This is one of the main reasons why up to the present year Germany has been almost universally superior to the Allies in air service, for although Germany had no machine as good as the



LOOPING THE LOOP

The general impression that exhibition flying on an aviation field is all that is necessary for Army service is a mistaken one. It takes much time and experience to make an Army aviator



AND NAVAL AIR SERVICE BY FRANK C. PAGE

LEARNED FROM THE WAR—THE PROBLEM BEFORE THE UNITED STATES—THE PLANS THIS COUNTRY THE BEST IN THE WORLD

best French airplanes it had adopted a universal system of control throughout the Empire, and was therefore prepared to go ahead with the improvements for fighting and scout service. In other words, Germany developed aviation from a point of view of military preparedness, whereas France developed it from a standpoint of sport, just as the United States has done heretofore. And the only sensible move for this country to make is to adopt the German plan and put aviation development completely in the hands of the Army, whose officers, collaborating with the most eminent scientists and manufacturers, not only know more about the subject than do persons outside the Army, but are the only ones who can develop aviation along the lines of adequate national defense.

The Army and the Navy up to the first of August of the present year had different systems of driving airplanes. An

Army aviator to fly a Navy machine had to learn all over again. When it comes to civilian flyers, each different make may have a system of control all its own—and in case of war a civilian aviator who had learned to fly excellently in some machine which did not have the Army control would be useless for defense purposes until he had learned the Army system of control. One type of machine is steered by hand-levers, another by a sort of yoke which the aviator manipulates by moving his body. The obvious result is that a man who was an expert in a Wright machine could not possibly run a Curtiss until he had gone through a new course of training.

This is only one illustration of the lack





THE LEWIS MACHINE GUN

This gun, shown here on an old type of airplane, is the last word in aerial fighting. Our service machines are equipped with all modern devices

of coöperation that has existed in aviation in this country and has held back the development of the art of flying. It is really inspiring to find that these great handicaps have been discovered and are being remedied in time of comparative peace in this country and that the United States is for once profiting mainly by the experience of others rather than by a great catastrophe in a time of national crisis.

There has been a great amount of talk about our unpreparedness in aviation, and the American public has come to believe that our air service is hopelessly bad. This has unquestionably had a good effect, for now, instead of a slow development handicapped by lack of funds, the United States is able to go into this field and tackle the problem in the way it should really be tackled. There is also an advantage in the fact that this impetus to aviation did not come sooner, for aviation has taken such great strides in the war that, had we had a complete organization three



THREE TYPES OF UNITED STATES ARMY SERVICE AIRPLANES

The speed scout, the reconnaissance machine, and the twin tractor battle plane. The Army has planned the standardization of the system of controls and of minor parts, such as nuts and bolts, so as to simplify the construction and repair of airplanes and yet to permit of improvements in engine and the planes

years ago, to-day it would be fit only for the scrap heap. England, which has been the slowest, perhaps, of the three great western European nations to develop aviation, has had more upsets in this department and more men turned out of office because of their so-called inefficiency than in any other branch of the army. The average life of the officials in charge of British aeronautics has been less than three months. And this is not because of their actual inefficiency but because, until within the last year, aviation has progressed so rapidly that over a period of three months many things which were new at the beginning of that time were considered obsolete at the end of it.

It might be interesting to go into the history of aviation in this country in order to get a background to show what remarkable work is being done by the Aviation Section, Signal Corps, of the United States Army. In 1908, the United States bought an airplane from the Wrights, for



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A WRECKED ZEPPELIN

Germany succeeded in perfecting an alloy of structural metal which combines lightness and strength, thereby being able to outdistance competitors



A WRECKED AIRPLANE

Many accidents are due to defects in machinery. Under Government supervision every part of every airplane bought by the United States Government will be inspected and stamped before going into a machine. It is better to spend money for prevention of accidents than to have our trained aviators maimed or killed

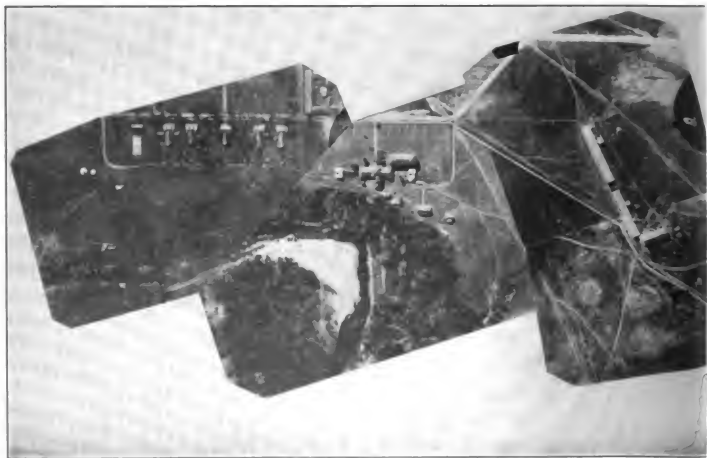


FIRST AIR SQUADRON, UNITED STATES ARMY, IN MEXICO

Within two months after mobilization the Aviation Section organized in Mexico an air squadron completely equipped with every modern device for reconnaissance and defense. One of these machines, according to reports from the border, is worth for the work in hand one whole regiment of cavalry

\$25,000, and, in 1909, it paid the Wright brothers a \$5,000 bonus because this machine was able to exceed the speed limit set by the specifications. However, Congress never supplied any money to fly the machine. Up to 1911 this was the only machine owned by the United States Army. From 1911 until March 31, 1916, the total appropriation of Congress for aviation was \$900,000. The inadequacy of

this appropriation is easily seen when one realizes that to-day in Europe the estimated cost of outfitting and keeping up one complete air squadron of twelve aviators for the first year is \$800,000, and \$600,000 for each year thereafter. In other words, if we had had the \$900,000 appropriated during the last five years in one lump sum it would have been possible to have completely outfitted just one air



PANORAMIC VIEW OF

This series of photographs was taken in a single flight from a height of 3,500 feet by Captain T. D. Milling. a great amount of efficiency is needed in taking these photographs



AN ARMY SERVICE MACHINE IN MEXICO

To be able to do the work in active service, flying must become second nature to an aviator, for he must be able not only to fly in all kinds of weather and across any kind of country but must also be able to take photographs, make observations, fight an adversary, and send wireless reports to his base

squadron of twelve aviators and to have run that squadron for one year. The extra \$100,000 would have been used up in the original training of the twelve aviators, so that at the end of that year there would have been no money to continue the organization. What actually happened was that the appropriations were made in one, two, and three hundred thousand dollar dribblets, so that at the

time of the Mexican crisis in March, 1916, there was no real organization fit for a military expedition, although there had been a number of Army aviators trained and although the Government owned a few machines which were good training machines but utterly inadequate for active service. In fact, there were no machines at that time made in the United States which any of the belligerent countries in



Photographed with the Brock Automatic Aeroplane Camera

FORT SILL, OKLAHOMA

United States Army. It illustrates one of the chief uses of the airplane in war and it can be readily seen that so that they can be pieced together for use at headquarters

Europe would use in active service without first substituting a foreign-made engine for the American-made engine. This should not be considered as a reflection upon the American manufacturers, because until the war started there was so little aviation in this country that it was a financial impossibility for any American manufacturer to develop an airplane that could compare with the foreign machines. The situation with airplane manufacturers up to a very recent time has been one almost of bankruptcy. One or two of them would have gone out of business completely had it not been for orders for training machines from England. It is gratifying to know that now the situation has changed and that the older airplane manufacturers who have been able to weather the past bad times can look forward to real progress and hope for future development.

In March, after Villa's raid on Columbus, eight machines which had been stationed at San Antonio were moved to the border. These machines, which were efficient under average weather conditions and although they were as good as any to be obtained in this country, were inadequate for the uses that they were forced to be put to in the rarefied atmosphere of northern Mexico, in every kind of weather, across a country where landing places were very rough.

Despite the fact that these machines were not suited for active military service, it should be recorded that due to the ability of our Army aviators a really remarkable amount of work was done with them and one American record established—that of flying 315 miles without a stop across country with one passenger. During the month from the middle of March to the middle of April, despite the handicap



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A SQUADRON OF BRITISH AIRPLANES

Up to the present time no American airplanes have been used on the battle lines in France, without first having been overhauled and a foreign engine substituted for the American engine. The best machines made in this country, the same as those used by the Army in Mexico, are used by the British for training purposes

of low-powered machines and adverse climatic conditions, this squadron made 215 flights for a total duration of time of 227 hours. The men ran into every kind of adverse condition, and the story of their work stands high in the annals of military achievements in our Army.

For an example, let us take the experience of Lieutenant Willis and Lieutenant Dargue, who went over and south of Chihuahua on a reconnoitering expedition. These men flew over the open country into the mountains. While over these wooded hills their engine went back on them and they attempted to return to the plains. However, they were unable to reach the flat country and were forced to land in the woods, completely demolishing the machine and badly spraining Lieutenant Willis's ankle. Here were these two men in a semi-hostile country, one

of them injured, forced to walk sixty-five miles to safety. This is merely one experience. There were a large number similar to it, some of which have already been published. These machines were unable to traverse the mountain ranges because of lack of power and yet, despite all these handicaps, the first air squadron in Mexico can show a record of which it can be proud.

Then, on March 31st, Congress authorized an emergency fund of \$500,000 to put the air service into some kind of shape. Inside of two months the Aviation Section of the Army was able, chiefly because one of the American manufacturers who was supplying training machines to the British Government had the machines ready for delivery, to equip the first air squadron in Mexico. This first air squadron, which joined General



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A BRITISH SEAPLANE BEING HOISTED ON BOARD A CRUISER

The United States Army and Navy have recently adopted a standardized system of airplane control and with the collaboration of some of the most eminent scientists and manufacturers in this country are working together to improve the military and naval aviation service in this country



A NEW TWIN TRACTOR HYDRO-AIRPLANE

This machine, which is considered well in advance of any machine previously turned out by American private manufacturers, has recently been accepted by the United States Navy

Pershing's column in Mexico, besides having a complete outfit of airplanes, has every modern device for reconnaissance and fighting that is used on airplanes.

In Mexico our aviators are running up against climatic conditions which in many ways make their work more difficult than the work upon the western European



SAN DIEGO, CALIF., FROM AN AIRPLANE

The Army Aviation School at San Diego to-day is the equal of any aviation school in the world. By the recent establishment of the Aërial Reserve Corps, any able-bodied citizen within the proper age limits who can pass the Government examination may receive at the Government's expense complete training as a military aviator and become a member of the Aërial Reserve Corps

front, even though they are not subject to aerial encounters with the enemy or shrapnel from anti-aircraft guns. To begin with, instead of starting at sea level from the ground, they are starting at from five to ten thousand feet above sea level, the height at which most airplanes ordinarily fly. In the second place, the extreme changes of temperature between midday and midnight and the burning sands of that part of the country put a test on the material used in these machines which is far beyond the tests they were originally made to meet. Lieutenant Chapman, when flying over Mexico, had one blade of his propeller fly off, which of course threw the machine out of balance. The engine was ripped out of its bed and hung suspended by a number of wires below the machine. By skill Lieutenant Chapman was able to balance his machine and bring it safely to earth. This merely illustrates the great caution that is needed in testing out every part of the airplanes which are to be used in the Army, for, after all, almost any amount of money used in testing every part of every airplane, as it goes through the factory, by experts under the direction of Mr. Henry Souther and of Dr. Stratton, of the United States Bureau of Standards, is very cheap compared with the possibility of a fatal accident to our aviators from a defective part.

OUR AIR SERVICE IN MEXICO

So, in a nutshell, six months ago the Aviation Section of the United States Army had a few airplanes, fit for training purposes only, and a small number of expert aviators. In less than two months after the emergency appropriation of March 31st there was with General Pershing's column a complete service air squadron manned by as good aviators as there are in the world and equipped with every modern device that airplanes should have for service in the field. According to Army regulations both here and abroad, General Pershing's column is equipped with more airplanes than are usually allotted to a force the size of his command. Cavalry officers themselves enthusiastically admit that one airplane such as we have had with General Pershing's column in

Mexico is worth, for the work in hand, one whole regiment of cavalry.

Moreover, between the time the emergency appropriation was passed on March 31st, when the Aviation Section of the United States Army was completely reorganized, and August 28th, when President Wilson signed the Army appropriation bill making the \$13,281,666 available for aviation, the air service in the Army had increased to a total of forty-one junior military aviators, with thirty-six more in training, and the number of airplanes was sixteen service machines, with thirty-three under order, and fifteen training machines, with eleven under order. This is really a remarkable achievement as it must be remembered that it was accomplished with an utterly inadequate amount of money and handicapped by the fact that the manufacturers were in no position to deliver these machines in a short time. Of course, most of the Army aviators now holding licenses had either been trained or were under training when the reorganization took place, for time and experience are the chief essentials for the training of a military aviator. Under the forced draft of war conditions in Europe it takes at least three months to train an aviator, but a six months' training course is admittedly more satisfactory.

MOBILIZING SCIENCE

It was during this time that President Wilson signed the National Defense Act, authorizing the establishment of twelve aviation sections in the National Guard, and a little later he authorized the organization of the Aërial Reserve Corps. As soon as these were an established fact the Aviation Section of the Army set to work to perfect plans for carrying out these two acts. Among the most notable steps that they took was enlisting the collaboration of scientists interested in aëro development and in persuading such men as Mr. Henry Souther and Dr. C. W. Averill to join actively in the work with the Army. The Technical Aëro Advisory and Inspection Board of the Signal Corps, assisted by the leading consulting engineers and scientists in the country, have taken all possible measures in the time given them

to develop the industry of airplanes and engines. More than this, President Wilson appointed from civil and military life the Advisory Board on Aëronautics, composed of the most eminent scientists and engineers such as Professor Joseph S. Ames, of Johns Hopkins; Professor Pupin, of Columbia University; Dr. S. W. Stratton, of the Bureau of Standards, and many others equally prominent, who are consulted on every move that the Army or the Navy takes in the organization for the development of our air defense.

The total reorganization of aviation in the Army which took place in April marks an epoch in the history of aëronautics in this country. Instead of being just a part of the Signal Corps work, it has been taken out of that field and made into a separate division, still under the Chief of the Signal Corps but really with a completely separate organization, under Lieut.-Col. George O. Squier, who was recently recalled from his post as military attaché to London. Congress wisely left the method of perfecting aviation in the Army almost entirely in the hands of the General Staff—wisely, because aviation is such a new industry that any restrictions which Congress might have made on this appropriation might easily have been obsolete by the time the President signed the Army Appropriation Bill.

The Aviation Section, realizing that this was a new industry and that many things could be learned from foreign countries and also by coöperation with the manufacturers of this country, went into the ranks of civilians and hired the best men available in aëro-dynamics and in the technology of gasoline engines, and, more than that, it organized in collaboration with the Aviation Section of the Navy Department. The Army and the Navy, for once working in hearty accord, after going thoroughly into the question of controls, have both adopted as a standard the straight "Dep" control, which is used at present in the French army.

As Colonel Squier, head of the Aviation Section, points out, the one essential in organizing this industry is that all the groundwork shall be thoroughly and carefully done before we go ahead and build

airplanes. To-day it would be perfectly possible for the Army to purchase perhaps a thousand machines in thirty days. Most of these machines would not come up to any specifications whatsoever, would not have been inspected, would have a number of different systems of control, and would inside of six months have to be thrown on the scrap heap, thus entailing an enormous loss of money and time. Aviation in the United States must be reconstructed from the ground up and not rushed along in a haphazard, irresponsible manner. Hence the careful selection of the men who are doing the work, civilians and Army officers together, and hence the infinite pains and plans which have been taken to give us the best air service in the world. And it is certain that we shall have one of the best air services in the world under these men and these plans if Congress will continue to be as liberal with its appropriation for aviation as it was this year.

Realizing that the airplane manufacturers have been greatly handicapped by the lack of adequate support up to the present time, the Government has gone a long way toward helping them. Because of the shortage of aircraft constructors, Army and Navy men have worked in collaboration with the manufacturers and given them their time toward making changes in the designs of their machines so that they will come up to specifications. More than that, to insure the best talent in the country the Aviation Section has gone to the leading steel manufacturers and automobile makers and such firms as the General Electric Company and the Westinghouse Electric Company and interested them in the building and development of aircraft.

THE AËRIAL RESERVE CORPS

The Aërial Reserve Corps opens the way for any citizen who is interested in aviation to become part of the national defense of the country. It is exceedingly simple, provided a man really desires to do this work and is physically fit for it. If he will write to the Aviation Section of the War Department they will send him a blank to fill out and he must take a physical examination prescribed by the Army.

In case he is considered a satisfactory applicant he will be sent to one of the aviation schools, where he goes through a course of preliminary training under Army supervision. As soon as he can pass the preliminary examination the cost of this training is refunded to him, and he then takes the more advanced training which prepares him for a Reserve military aviator's license. Of course, any man who can fly or who holds any pilot's license will be given the preliminary test, and if he is able to pass that and the physical examination he will then be trained at the Army's expense through the higher course.

The ordinary layman who has seen aviators flying around a flat field in perfect weather, spiralling in the air, looping the loop, and so forth, before a large crowd in the grandstand or at a summer exposition on a perfectly clear day, thinks that when this much proficiency is obtained the men are ready to go actively into war with the Army. Many a militiaman thinks that when he has learned to fly around the aviation grounds and land without breaking a wheel he is practically ready to be a scout for General Pershing. As a matter of fact, the preliminary course of training is about equal to learning to drive a Ford on a country road in comparison to driving a 140 horse-power Mercedes in a Vanderbilt cup race. The skilled aviator to-day in war time must be able to take photographs of the country, fight his adversary with a machine gun, drop bombs, send wireless reports back to his base, dodge shrapnel, and do this in almost every kind of weather, meanwhile manipulating his machine. Flying an airplane must become automatic, instinctive, with an aviator before he is really able to be of service in case of war.

Besides perfecting the airplane and consummating the plans for training and equipment of aviators, the Government is carefully working out its plans for Zeppelins, dirigibles, and observation balloons. A lighter-than-air school has been started at Akron, O., for this purpose. All the things that go with aviation in peace and war time are receiving the most careful attention and being pushed as rapidly as is feasible. One of the most eminent aéro-

nautic engineers in the country remarked the other day that he expected in a short time to see aviation fool-proof. To use his exact words, "that it would be safer to fly than it is to run an automobile in the streets of a city." Such things as stabilizers, landing devices, and automatic parachutes for aviators are all either practically accomplished or within the realms of immediate possibility. There are being perfected new types of compasses, self-starters, cameras, and automatic pilots which will keep an airplane going in a given direction despite wind currents and pockets without the aviator touching the steering apparatus. The Bureau of Standards is at work with the manufacturers on alloys which will lighten the weight of every kind of aircraft and yet increase its strength. Every machine which the Government buys is inspected piece by piece during construction by expert men placed by the Government in each factory. There is no danger that an unscrupulous manufacturer can now sell a machine with some defective part hidden or shellacked over. Every part must have the Government's inspection stamp on it.

THE PROBLEM IN AVIATION

And thus the object is to build up side by side the perfect aircraft and the perfect aviator. We have got to make haste slowly, for aviation in this country has gone forward up to now in a heterogeneous, haphazard manner, necessitating in many instances a return almost to first principles, from which we must start anew, systematically, scientifically, and sensibly. Standardization of all minor parts, such as bolts, nuts, wheels, etc., is a logical step which is being taken. We must develop motors equal if not superior to any in the world, and in this one respect we are still far behind Europe. There are many such improvements possible and it really should be a cause of pride to the American people that this reorganization of the new industry, aviation, has been taken up scientifically and capably by the Government and the manufacturers before there had been any enormous waste of public money, time, and energy in work along false lines.

SOME GREEK AND RUMANIAN FOOTNOTES

HOW A POPULAR REVOLUTION IN GREECE CLUNG TO A POPULAR MONARCHY AND HOW
A NATIONAL BARGAIN IN RUMANIA DISCARDED NEUTRALITY WITHOUT REFER-
ENCE TO MONARCHY—A FEW HELPFUL FACTS ABOUT THE TWO
NATIONS SLOWEST TO ENTER THE GREAT WAR

BY

GEORGE MARVIN

A GREEK Garibaldi really started the revolution which led to the abandonment of a long neutrality. His name was Colonel Epaminondas Zymbrakakis and, as the sound of his name seems to suggest in alien ears, a warlike, black-mustached and black-browed, swarthy pirate of a patriot. Incidentally, he happened to be brother-in-law to Monsieur Casenave, the Frenchman who is now representing his Government in the negotiation of national loans with the United States.

Now Colonel Epaminondas had a colleague in his patriotic endeavors who was his perfect foil in appearance and temperament. This man was also a Colonel, Nicolas Christoboulos by name, one of the most beautiful men in the world, fair, and tall, and serene, and good "to break the heart."

Epaminondas Zymbrakakis, like all his Garibaldian forebears, was a Cretan, chief of all the Cretan military, and a man of distinction in the Balkan War. In the Greek lands and islands which surround and dot the Ægean his people have been known for generations. When, in 1906, the mutiny took place at Athens and the garrison camped outside of the city, it was Zymbrakakis who commanded them and it was he who demanded of King George that a Cretan should be called to be Prime Minister. That Cretan was Eleutherios Venizelos.

It is Crete that is running this autumn Greece of 1916, with Venizelos at the head of the party, at the head of Greece, and intellectually at the head of the Balkans.

The Cretans are the radical, progressive party in Greek politics, as opposed to the Ionians, who are the standpatters. But the other patriot who, with Zymbrakakis, really started the revolution of September, comes from the Island of Eubœa, in the Ægean, off the eastern coast of peninsular Greece. He it was who, at Kavala, flatly refused to surrender to the Bulgars the fort which he commanded. The surrender had been demanded in return for specific pledges that the position would be given back to Greece at the end of hostilities, and in view of these pledges the Government at Athens had directed that the Kavala forts be temporarily abandoned. It was almost certainly General Dousmanis, an Ionian and then Chief of the General Staff, who ordered the surrender at Kavala. He is a pronounced pro-German, of German education, although it is difficult to see how he could have persuaded himself that the Bulgars would be in a position to live up to their promise about returning a surrendered port city on Greek territory. Knowing the vital importance to Greece strategically and economically of the Kavala-Seres region of which the former fortress was the key, Colonel Christoboulos wisely and patriotically disobeyed the orders of the Government at Athens.

These two men, then—the black pirate at the head of the cavalry in Saloniki and the Greek god stubbornly commanding his fortress at Kavala—began the open revolt against the authority of King Constantine and his pro-German Government. But they were really the outward and visible signs of the great plans working

behind the gold-rimmed spectacles of the Master Patriot, Venizelos.

Both Zymbrakakis and Christoboulos were devoted to the Greek statesman. In a little house at Athens, set back in deep gardens on the "Odos Patisson," they used frequently to meet and talk over the glory that might be Greece, as well as the glory that was. There, in this villa of a lady of high degree, they organized the revolt of 1906, and there again they conspired to abandon neutrality in this world war, and, if by any means possible, carry the King with them into active belligerency. Cretan-led Greece wanted to go to war, but they exhausted every means to have the King go with and lead them.

And here we come to that most peculiar characteristic in the Cretan leader of Greece and in the Greek people whom in his golden speech he calls "my children." For that matter, every politician or leader of the people in Greece, whether he be called Venizelos, or Zaimis, or Skouloudis, has tried to get, and to keep, the King out of difficulties. The long postponements of a Greek declaration one way or the other, the extraordinary continuance of Greek neutrality while Greece was fairly saturated with Entente Allies, were due to this central fact.

The Greek people like and respect their King. Like a big conglomerate mother, through months of continuous strife and faction they cherished him. This should be the directing line for all that we read about Greece and its neutrality or its belligerency. The nation has probably now lost forever its opportunity to come in with the Central Powers. They never had much of an opportunity, except at the very outbreak of the war, and certainly not much incentive with a quarter of a million Allies occupying their soil and peaceably investing their capital. The situation of the German Queen became unbearable. Not a supple mind and very Hohenzollern, it seemed always possible that she might go into a voluntary exile. But never for a day would the people stand for the abdication of the King.

Many times during the last year Venizelos could have headed a national movement as he at last did in September.

But, as we have said before, he knows that monarchy is the only answer for Greece. A republic will not do there, or rather, government by any other name would smell sweeter and fit more sweetly the Greek temperament. Such loyalty is the greatest asset a monarchy can possess; it might be a lesson to some democracies.

Against Venizelos and his Cretan revolt for Greece were the King and Queen, overwhelmed but stubborn, and the pro-German section of the Greek army, who perhaps dovetail rather closely into the standpat section of Greek civil politics. It did not seem much of a resistance to overcome. The Prince Royal and his brothers were always pro-French and English and the army in its demobilized condition became constantly more at the mercy of the Entente armies on Greek soil.

RUMANIA'S REASONS

Greece lingered over a decision which Rumania had taken. But there was never in Rumania the same balancing of patriotic motives which held Greece so long neutral. In Rumania it was simply a matter of bargaining. In this nation of Romance origin, with a Latin speech and a Latin civilization, the sympathies of the country naturally flow toward France and toward Italy and the great cause which bound these countries to the ever growing concourse of the Allies. On the other hand, during the first two years of the war, it seemed very clear to those who are making Governmental decisions at Bukharest that Rumania's bread was spread with German butter. The country became a kind of human stock exchange in which the market prices rose and fell while French and Russian brokers bid against the bankers and buyers of Austria-Hungary and Germany.

Some of the money which a shrewd Rumanian policy made out of exports to the Central Powers was spent in German- and Austrian-made munitions of war. England outbid the Germans for a part of the Rumanian grain crop, which was still warehoused in September until it could be brought out through the Dardanelles or perhaps across Bulgaria to an Aegean port. France also cornered a

large part of the oil which was then still in Rumanian soil or French-owned tanks.

While they were bidding with money the international brokers were bidding even more eagerly with territory. Russia bought Rumania with a long-desired Bessarabia and the Russian promise to provide munitions. Four months before he put his nation into the war, Take Jonescu told a friend of the present writer's in Bukharest that Rumania would join forces with Russia at the end of the period mentioned. They had made the decision, he stated, but must postpone the opening of hostilities until they could be sure of a sufficient reserve of munitions promised from Russia. Presumably, four months from this time, that reserve was at hand or guaranteed.

PUBLIC OPINION IN RUMANIA

In the sense that there is a public opinion in countries like France or England or the United States, no public opinion exists in Rumania. No generally shared public opinion has terminated Rumanian neutrality, but there are two popular ingredients in the declaration of war. One is the deep hatred of Rumanians for their Hungarian neighbors in Transylvania, and the other is the long-continuing border apprehension and hostility across the Danube toward Bulgaria. So far as the war is popular, then, it is a matter of shrewd bargaining, plus a fairly general Hungarian hatred, and a feeling of self-protection against Bulgaria. If the Central Powers had maintained their military advantages of the first two years of the war, Rumania would still be neutral.

The affairs of Rumania are really in the hands of a relatively small aristocracy. There are comparatively few small landholders. Many of the big families are descendants of old Phanariot princes from Constantinople, who own great tracts of agricultural or grazing land as large as small Texas ranches. The leaders of these families are, in Rumania, princes no longer; when they went to Paris or to the Riviera as the case may be, they pulled

their titles out of their bags and got all the princely consideration they wanted.

It is at the head of a constituency of these big land owners and manufacturers that Bratiano, Bebesco, Filipesco, and Take Jonescu have finally swung their nation in to the Entente column. The King has been negligible. The situation as it affects the monarchy in Rumania is almost the reverse of that in Greece. Queen Marie, of Rumania, an English princess, is, like the Greek, Sophia, an alien sovereign, but, unlike the Greek queen, she is very popular with her subjects. The unwritten archives of diplomacy contain some spirited anecdotes about this gracious, high-tempered lady. She has been exceedingly handsome and still, at forty, retains a face and a figure. Such opinions as prevail in the royal household are those of the Queen, who is so strongly pro-English that, when one day she slapped her royal son's face and was reproved by old King Carol, she immediately replied that she would do the same for him if he dared to speak, as her son had done, slightly of her English cousins.

JONESCU AND VENIZELOS

Take Jonescu, therefore, who occupies the same relative position in the fortunes of his native state as Venizelos holds for Greece, never had to compromise his native leanings toward one side or the other in this war by the patriotic desire to save the monarchy. Possibly, however, he and Venizelos have been more closely identified than most of us appreciate. There is an unannounced engagement of marriage between one of the Greek royal princes and Princess Elizabeth Charlotte, of Rumania. The Greek mind and personality which conceived and held together the Balkan Confederation against Turkey through the terms of a triumphant peace may well have had a share in the final decision in Rumania. There is much more here than meets the casual eye, as we shall see when the terms of peace come to be negotiated. Venizelos is a great patriot; he is also a great bargainer.

ANOTHER RADICAL FOR THE SUPREME COURT

JUSTICE JOHN H. CLARKE, A FRIEND OF THE LATE TOM JOHNSON AND A LAWYER WHO, WHILE EMPLOYED BY "BIG BUSINESS," WAS A CHAMPION OF PROGRESSIVE AND REFORM LEGISLATION

BY

BURTON J. HENDRICK

WE CAN make at least one statement concerning Mr. John H. Clarke, who is Mr. Hughes's successor on the United States Supreme Court. He certainly looks the part of a judge. Radical Mr. Clarke may be, and, therefore, in the estimation of certain timorous souls, a danger to American institutions; in personal dignity, however, the new appointee meets every requirement. He is stately, courtly, soft-spoken, detached; his smooth face, which is surmounted by well-groomed, silvery hair, is classic in its outlines; he is one of our few every-day Americans who could wear a Roman toga becomingly. Stories from Cleveland tell us that he has loved the hurly-burly of politics; that he has campaigned side by side with Tom Johnson, and has even found the famous Johnson circus tent an inspiring political forum. The trait which his exterior most suggests, however, is mental poise and self-control. Above all, Mr. Clarke is "judicial."

Mr. Newton D. Baker, Secretary of War, is the man mainly responsible for Mr. Clarke's elevation. This appointment is another indication of Mr. Baker's increasing influence with the Wilson Administration. Mr. Baker is the leading spokesman of the Cleveland school of politics; he is a single-taxer, a believer in government ownership, the initiative and referendum, the recall, "social justice"—in "democracy" as generally understood and practised by the late Tom Johnson. Fundamentally the point of view that placed Mr. Brandeis on the Supreme Court also stimulated the appointment of Mr. Clarke. The forces of conservatism, who

objected to Mr. Brandeis as a radical, might similarly have raised their voices against Mr. Clarke. For he also believes in the initiative and referendum, in municipal ownership, in decent treatment and working conditions for the laboring men, and his sympathies, throughout an active professional and political life, have been distinctively with the "masses" as against the "classes." Men of liberal minds on the Supreme Court are not particularly new; Justice Holmes and Justice Hughes represented this type; in Messrs. Brandeis and Clarke, however, our highest tribunal contains at least two men who may be classified as "radicals." With their appointment the Supreme Court may be regarded as having entered a new phase of usefulness. If that "class consciousness" of which the Socialists complain has tended to make its judgments lean in the interest of the established order, the appointment of Mr. Brandeis and Mr. Clarke must be regarded as establishing counter-irritants on the side of popular rights.

In the last twenty-five years Mr. Clarke has made two conspicuous appearances in Ohio politics. It is significant of his general attitude that, on both occasions, he has taken his stand side by side with Tom Johnson. In 1894, he was the chief disturbing element in perhaps the most tumultuous political convention ever held in Ohio. That year marked a crisis in the Democratic Party. Cleveland had been elected President on the tariff issue; yet he had himself refused to sign the tariff bill which the Democratic majority had passed, stigmatizing it publicly as a product of "party perfidy and party dishonor." This bill, indeed, represented one of the

most infamous betrayals in our history. At the last moment three Democratic Senators—Gorman, Smith, and Brice—had turned their backs upon their own party and inserted a clause favorable to the Sugar Trust. Newspapers throughout the country for months excoriated these law makers as the "Senators from Havemeyer." Ohio Democrats had a particular interest in the scandal, for Brice, one of the sugar Senators, represented that state. The Ohio Democratic convention met at the height of the excitement. Brice and his friends controlled the party machinery and evidently, as the convention assembled, dominated the whole proceeding. Brice, indeed, had staged the situation with the idea of securing a "vindication"; his convention, according to the set programme, was to pass resolutions endorsing his behavior at Washington. Brice himself took a conspicuous seat on the stage where he might obtain the best view of his own triumph. At the critical moment, however, an unaccustomed figure, described in the newspapers as a "Youngstown attorney," arose on the stage and read, not an endorsement of Brice, but a resolution calling for the election of United States Senators by popular vote. He made a dignified appearance; his hair then, as now, was silvery white; according to the newspaper reports, his "tall and spare figure had the bearing of a finished tragedian." Though his first quiet, well-modulated words started an antiphonal chant of cheers and hisses, Mr. Clarke himself was the picture of unimpassioned self-restraint; he occasionally waved his index finger in the direction of the red-faced Brice, sitting in full view on the platform, but for the most part he dispensed with flourishes, and let a few simple words tell his story.

"When any great question is before the American people for decision, what one of you looks to the debates of the United States Senate for light? Not one," said the speaker with emphasis, and paused. "Not one," came like an echo from the rear of the hall, and then the uproar began, for the convention was about equally divided between friends and foes of the measure. "When a United States Senator is to be chosen," continued Mr. Clarke, when the storm had subsided, "the question is no

longer asked, What is his worth?—meaning what is his character, what are his talents, what service has he rendered the state or what service is he capable of rendering it? No, these questions are no longer asked. The only question now is, not, What is his worth? but, What is he worth?—meaning how much money has he?—as if the length of a man's head could be measured by the length of his purse."

With the conclusion of every sentence there came a storm of cheers and hisses, which culminated with the speaker's last sentence: "This is a question that rises far above mere men, far above party, it is a question vital to the welfare of your country, for you all know that the Senate has become a mere rich man's club, a nesting place for trusts, combines, and understandings in which the hateful Sugar Trust has lately raised its hydra-head and in the name of the community of pelf, seizing the Democratic Party by the throat, has compelled it to stand and deliver."

This personal allusion to the Senator placed so advantageously on the platform produced a scene of the wildest disorder. "There was never a more intense and thrilling passage in Ohio politics," says a contemporary historian. The speech not only made Mr. Clarke's reputation as one of Ohio's leading orators, but it definitely placed him on the side of the radicals and malcontents, who were fighting to redeem the state from the corporations and franchise grabbers who controlled it.

HALF OWNER OF A PROGRESSIVE PAPER

Yet neither Mr. Clarke's ancestry, nor his own associations, as they had manifested themselves up to that time, would have seemed to fit him for the part. His father, a native of the north of Ireland, was one of Ohio's leading lawyers. Mr. Clarke was born in New Lisbon—a town otherwise celebrated as the birth-place of Mark Hanna. His interests had always been intellectual; he had graduated from Western Reserve, in 1877, with high honors, and soon afterward had begun practising law at Youngstown. He early had a bent toward journalism, and for many years he wrote the leading political editorials for the Youngstown *Vindicator*.

This paper, which Mr. Clarke half owned and in which he still has a substantial interest, became early distinguished as an advocate of civil service reform. When President Arthur made up the first national civil service commission, he recognized the pioneer work accomplished by the *Vindicator* by appointing Judge L. D. Thoman, Mr. Clarke's partner in the paper, as one of the three commissioners. Mr. Clarke also varied his law practice with literary studies; he acquired fame in Ohio as a Shakespearean scholar, his lectures on Shakespeare's Fools and kindred subjects always attracting large audiences.

HIS CLIENTS CHIEFLY CORPORATIONS

Above all else, however, he was the lawyer. Any one searching his record for points of attack might derive much satisfaction from Mr. Clarke's clients. The larger part represented precisely that class against which his political efforts have been mainly directed. In Youngstown he represented the Erie and the Pennsylvania railroads and the banks; when he moved to Cleveland, in 1897, he became the counsel of the Nickel Plate Railroad. His Cleveland firm, Williamson, Cushing & Clarke, specialized in railroad and corporation law and Mr. Clarke was the trial lawyer. These circumstances would easily enable one so inclined to pillory Mr. Clarke as a "corporation lawyer." But he has always regarded his professional and his personal activities as residing in separate lobes of his brain. "I am employed by corporations," he once explained, "but I am not a corporation lawyer." His retaining fee, that is, engaged only his legal skill and not his influence as a citizen. Indeed, all the time that he was practically running the Nickel Plate Railroad in five states, he was indulging in propagandas which were generally regarded as unpopular with his employers. Mr. Clarke is a bachelor and had elaborate bachelor quarters at the University Club of Cleveland and was an active member of the Union Club of Cleveland, an institution composed largely of standpat Republicans. He has always taken particular pleasure in advertising his revolutionary ideas in this luxurious atmosphere.

Here he preached the gospel of Tom Johnson and three-cent street car fares, and regularly defended the image-breaker in his assaults upon the magnates of Cleveland. At the first meeting of every Johnson campaign Mr. Clarke was a regular figure; no such popular movement was regarded as fairly launched until he had made his introductory speech.

BUT HIS POLITICS RADICAL

Yet his attitude, toward both the radicals and the captains of industry, was that of the detached philosopher. Familiar with books and history, he readily appreciated the weak spots in both. Not every blatant proclamation of "democracy" signified, in his estimation, genuine progress; neither were the corporations entirely without rights. He once defined himself as "a progressive who keeps both feet upon the ground." Early in his Cleveland experience he found a congenial companion in Newton D. Baker; he even offered his young friend a law partnership. But he never went to such extremes as Mr. Baker did in his political thinking. "All the things you believe in, Baker," he would say, "may be right and may some day come true. But you can't do it all in five minutes." Thus Mr. Clarke, progressive as he was, was not a world-reformer. He would fight for the short ballot, two-cent railroad fares, railroad regulation, the initiative and referendum, municipal ownership, free trade, but he would draw the line at such things as the recall of judges and judicial decisions and the single tax. In that famous Ohio convention, already described, another issue than the popular election of Senators came to the front. This was the free coinage of silver. Against this economic absurdity Mr. Clarke also directed his influence. He was one of the Democrats of 1896 who refused to follow Bryan; instead, he was one of the leaders of the Palmer and Buckner forces and stumped for those candidates. On the other hand, as counsel for the Nickel Plate, he adopted a humanitarian attitude toward workmen that has always placed the labor unions on his side. He was a railroad lawyer who liked to "settle" for industrial accidents; his "settlements," however, erred on the side of

liberality toward the victim. Even while attorney for the Vanderbilt roads, Mr. Clarke carried on a propaganda for a two-cent fare law; though the common carriers could not see the point, he always argued that the reduction, by increasing traffic, would swell their earnings—a prediction which Ohio's experience with the law has since justified. Another cause with which the new Supreme Court justice has long identified himself is woman's suffrage. Though unmarried, he has always had, in his two sisters, the closest and most affectionate domestic ties. One of these sisters, Dr. Ida Clarke, a practising physician, is an important person in Youngstown, and has exercised a considerable influence upon her brother's career.

HIS CANDIDACY FOR THE SENATE

Mr. Clarke's ambitions have hardly been judicial; if he has aspired to office it has been to represent Ohio in the United States Senate. It was this ambition that brought him a second time into wide public notice—again alongside of Tom Johnson. In 1903 the Democrats nominated Johnson for governor of Ohio and Clarke for United States Senator. The Republicans nominated for the same offices Myron T. Herlick and Mark Hanna. Mr. Clarke started his campaign in company with Tom Johnson, in a tent at Akron. The campaign was a lively one, although Mr. Clarke had little chance from the beginning. Hanna introduced an element of comedy by assailing Mr. Clarke as a "corporation lawyer" and an enemy to the workingman! To prove the latter Hanna led around the state, as an unanswerable exhibit, an ex-employee of the Nickel Plate Railroad whom, he declared, Mr. Clarke's corporation had blacklisted. Mr. Clarke proposed that he and Hanna debate the issues, after the manner of Lincoln and Douglas, in the close districts—an invitation which Hanna discreetly declined. Mr. Clarke's issues were two-cent railroad fares, equitable taxation, the popular election of United States Senators, and anti-imperialism. He attacked Hanna's record, especially his enthusiasm for street railway franchises, protection, and ship subsidies. He advocated taking the tariff

off articles made by a trust, limiting capitalization to property actually invested, and immediate independence to the Filipinos, reserving coaling stations for the United States. He declaimed against the use of money in elections, and promised—a promise he religiously kept—to publish full details of the cost of his canvass. To all this Hanna replied by hurling the words "Socialism" and "Communism" at Mr. Clarke. "The moral features of this campaign," declared Hanna, "are paramount. This is because the Socialist strikes at the home. I beg of you to rise and kill this attempt to float the flag of Socialism over Ohio."

AS DISTRICT JUDGE

Hanna was elected; Ohio was freed from its "Socialistic" menace, and Mr. Clarke was reduced to the necessity of preaching his destructive doctrines in the millionaire clubs of Cleveland. But the time soon passed when Mr. Clarke could be regarded as a "red" simply because he disbelieved in stock watering, franchise grabbing, and tax dodging. The careers of Roosevelt at Washington, Hughes in New York, and Wilson in New Jersey pictured him merely as a man who had been ahead of his time. He kept on working for progressive things, framed several of the best clauses in the new Ohio constitution, and unobtrusively advised the Baker-Johnson campaigners in Cleveland. He had dropped his relations with the Nickel Plate Railroad about the time of the Senatorship campaign; a moderate though comfortable fortune, which represented the earnings of his law practice, enabled him to live peacefully and enjoyably. In 1914 President Wilson surprised him by making him United States District Judge in Ohio. Certain people set up the cry of "corporation lawyer"; a brief inquiry by the Attorney-General, however, quickly disposed of this accusation.

On a recent visit to Cleveland, Mr. Roosevelt, after being introduced to an audience by Mr. Clarke, walked over to the judge, shook his hand, and, turning to the audience, said:

"The doctrine of the recall of judges does not apply to such men as Judge Clarke. They should hold office for life."

HOW TO AVOID PNEUMONIA

AND WHAT CAN BE DONE AFTER IT HAS BEEN CONTRACTED—ALSO, WHAT SCIENTISTS KNOW ABOUT COMMON "COLDS"

BY

CHARLES PHELPS CUSHING

TO MAKE sure that this series of articles shall be authoritative, the WORLD'S WORK has arranged to have them reviewed and approved by the Life Extension Institute before they are published.

The Life Extension Institute was organized by well known scientists, publicists, and business men as a semi-philanthropic enterprise to disseminate the knowledge of healthful living among the people. Ex-President Taft is president of the Board of Directors, and its professional advisers include some of America's most distinguished physicians and surgeons, as well as the most prominent educators. The Institute's approval of these articles, therefore, assures their scientific character.

WE WHO are not scientists, but who have a smattering of scientific information, usually cherish a grim suspicion about this time of the year that an open season for hunting has been declared and that we are the game—the prey of "seasonable" infections. As cold weather approaches colds and coughs appear, influenza and bronchitis, epidemics of grippe and pneumonia. Now these ailments, we have heard, are caused by predatory germs. "Not so fast, please!"

The medical scientist begins to fidget in his chair at the first mention of "colds," and as soon thereafter as he can he interrupts the layman's argument.

"Let's get this matter straight," the scientist pleads. "In the first place, not all the blame can be laid upon harmful germs, for they often attack us without doing any damage. For example, certain strains of pneumococci—and they are the fellows you are likely to dread the most—are constantly present in the saliva of many persons without causing any trouble. Lesions of tuberculosis, as autopsies show, are found in nearly every human body. So, not so fast, please! Before we go any further, let's clear the ground of any possible misapprehensions.

"You may, at this instant, be breathing in the micro-organisms of a cold, and yet

not be catching a cold. It is a fact that germs are everywhere, but that is no reason to be panicky about them. There are, of course, many more harmful microbes in a crowded street car at the six o'clock rush hour than there are on the top of Pike's Peak, but there are a few infectious particles in the air even out in the middle of the Atlantic Ocean. What the public usually forgets when it talks in terms of bacilli is the fact that there are helpful germs as well as harmful ones, and that nearly every disease culture has sturdy enemies to war against within the human body. Call these, our allies, what you will—anti-toxins, phagocytes, anti-bodies—the name doesn't matter. The important thing to recognize is that if we give our allies a fair chance to put up a fight for us, they will do it with a vigor that will resist any attack but the most virulent."

"A fair chance to put up a fight?"

"Yes—just that. Keep your body clean inside and out. Give yourself enough fresh air and enough exercise to keep in condition. Strike a proper balance of work and relaxation, avoid excesses of all sorts—mental or physical—for what is 'good for your health' strengthens your internal allies. The right kind of food and not too much of it, enough sleep, a chance for your skin to breathe: the rules of right living are the rules of warfare for protecting yourself against attacking germs.

"The reason why we don't have so many colds and so much pneumonia in June as we do in November lies in our lack of ability to live as rationally in November. We cut down on our supply of fresh air. We take less exercise. We subject our bodies to extremes of temperature. We shut ourselves up in crowded places where infection has ideal conditions to propagate itself. In June we were in the open air a lot, went walking and swimming and driving, kept the windows open and needed no cocktail to give us an appetite. Sad is the contrast now, and we pay the penalty. We take no more open-air exercise but we eat as much as ever. We work harder but sleep less, for the social season is on. Only an hour or so a day are we in the open. For the rest of the time we are in sealed houses, stuffy subways and street cars, ill-ventilated offices, restaurants, theatres, and ball rooms, breathing heated, humid air that has a high percentage of infectious microbes. At a season when our resisting power is lessened by our way of life and the changes of the temperature, we keep ourselves, most of the time, in places ideal for the spread of breathed-in infection. Under these conditions our internal allies haven't a fair chance to put up a fight for us, and 'seasonable ailments' multiply. But don't blame the season. Don't blame germs. It is up to us to meet the emergency. And we can! By simple precautions we can lessen the risks of infection from disease germs, and by right living we can increase our powers of resistance to their attacks."

THE PROVERBIAL OUNCE OF PREVENTION

Why lay so much emphasis upon preventive measures? Every one of half a dozen experts to whom I applied for information talked in the same strain. The answer to the query is that prevention is a matter of the utmost importance in dealing with such infections as colds, grippe, and pneumonia, for medical science knows more about how to forestall them than about how to cure them.

"We can't really 'cure' even the so-called 'common cold,'" confessed Dr. Eugene L. Fisk, of the Life Extension Institute. "We can make the patient

more comfortable, we can render highly important service by lessening the danger of complications, we can shorten the cold's duration, but we can't keep it from running its course once it has been contracted. No one but a quack with a proprietary drug to palm off advertises that he can cure a cold in a day. We don't pretend that we can render any one immune from its infection; we have no recognized serum for it. That it is in most cases an infectious disease the scientist doesn't doubt, any more than you yourself doubt after having seen how the infection will travel through a family or a larger associated group. But the virus of colds is difficult to study. We are continually confronted by "mixed" infections, a choice collection of germs getting in their work, and some difficulty in placing the full responsibility.

STRENGTHEN YOUR RESISTANCE TO COLDS

"Now what is the most businesslike attitude to assume in such a situation? Shall we allow our minds to dwell on the peril of infection, or shall we resolve to adopt a few simple precautions against germs and to fortify our systems against attack? Certain persons are peculiarly susceptible to colds, to grippe, to pneumonia, and the like. The first thing for such persons to do is to go to a medical examiner to find out, if possible, why. A local condition, which may be remedied without much difficulty, may be the cause. An obstruction in the nasal passages, for example, an unhealthy condition in the mouth or throat, a faulty posture or something of that sort may be all that is wrong. Where some local defect can't be discovered, frequent colds usually are an indication that the applicant is not living right."

In the way of practical advice, Dr. Fisk suggested, first of all, that one of the best methods for preventing colds is to breathe as much fresh air as possible; a draft, he holds, is not to be feared unless it is strong enough to be chilling. It is as silly to weaken your resistance by coddling as it is to be over-Spartan. The skin can be trained to help resist germ infection; and one of the worst ways to train it is to work, and live, and sleep in overheated rooms. The same sort of rules

applies to clothing. Adapt your clothing to the condition of your health and to the conditions of the weather. One man can wear light underclothing all the year round; for another whose physique is not so hardy or who has chronic heart or kidney trouble, such a course is folly. It is as harmful to expose yourself too much as it is to weaken your resistance by bundling up. Baths? One man can take cold baths and be no worse for them; another of a more delicate constitution will suffer nervous shocks from the same temperatures. Try out your skin and find out its reaction point. Of course, you will do well to avoid constipation, overeating, and extreme fatigue, for these all aggravate colds and invite them. The man who is subject to colds should be sparing in his use of tobacco, and should know that he weakens his resisting powers if he drinks alcohol. In many an instance where death is attributed to a severe cold or to pneumonia, the real cause was that the patient's system was so weakened by drink that it had no resistance to offer to germ attack.

WHAT TO DO FOR A COLD

But suppose one has caught a cold. What can he do at home to mitigate it?

Take a patent cold cure? A dose of quinine or some whiskey? Eat a big meal, on the theory that a cold must be "stuffed"? Dr. Fisk and all the other men I talked to emphatically answered "no" to every question. It may be wise to skip a meal or two. Quinine and whiskey sometimes are so far from the proper prescription that to take them is perilous. Patent cures are never so reliable and safe as certain home remedies. The violent exercise prescribed by certain physical culture faddists is no safe prescription, either; particularly is it to be avoided during times of infection from such ailments as tonsilitis or grippe. After you have caught cold it often is advisable to go to bed for a time; certainly it is highly important to keep the body warm. Lively outdoor exercise is one of the best of preventive measures, but one of the worst of remedies once a cold has been contracted.

Under the heading of "Things To Do," a bulletin of the Life Extension Institute

condenses into a table these valuable hints on emergency treatment:

"On first sign of a cold, a hot foot bath, lasting half an hour, and a drink of hot lemonade—or, better still, hot flaxseed tea (one half ounce of whole flaxseed to a pint of boiling water, flavored with lemon peel or licorice root) will often break its force.

"A brisk purge is also advisable.

"A mild menthol-oil spray may be used occasionally in nose and throat.

"Neck and chest and nostrils may be rubbed with camphorated oil.

"If the throat is sore, a gargle or spray of peroxide of hydrogen, one part to three parts of water, may be frequently used.

"Also, cold compresses to the neck, or gauze pads saturated with equal parts of alcohol and water.

ALCOHOL, FRIEND AND ENEMY

"An alcohol rub-down is also good as a first aid measure. Used externally, alcohol is a real friend. Internally, it is a dangerous enemy.

"The spread of septic sore throat and other germ diseases by milk is very common. Pasteurized milk is safest during epidemics.

"If there is severe headache, faceache, earache, pain in the chest, sore throat, or high fever, there should be no delay in calling a physician."

An Army surgeon of the United States Public Health Service who has had much experience in epidemics (and at this writing is still at work upon the infantile paralysis plague in New York) was the next expert to whom I applied. Dr. C. H. Lavinder explained to me how an epidemic of colds, grippe, tonsilitis, and the like spreads through a community in winter by means of infected air. The public, he said, realizes more keenly to-day than it ever did before its own responsibility in matters of public health, and it can be depended upon to coöperate earnestly and rather intelligently in such work as that of helping to check the spread of poliomyelitis; but it has not yet grasped the advantages to be gained from observing the rules that would help to check the spread of the respiratory diseases of winter time. For some reason difficult to discover, the man

in the street still refuses to take seriously the warning that colds, pneumonia, tonsillitis, and the like are infections which are spread by the breath. He doesn't cover up his sneezes with a handkerchief when he has a cold; he doesn't keep at arm's length from the infected; and he continues to spread contagion by coughing and spitting. After an attack of grippe he goes out among other men before he has fully recovered and transmits virulent germs to the air of crowded cars and halls.

Dr. Lavinder is an optimist, however. The man in the street is gradually learning the ethics of infection, the doctor holds, and medical men, at the same time, are repenting that for so long a time they have underrated the public's intelligence. As they give the public a better chance at the facts, the public's manners improve.

"Education in sanitation is accomplishing much," says Dr. Lavinder, "and every year will accomplish more. The public is learning that what it can do by intelligent coöperation with health authorities and by preventive measures is vastly more important than what the doctors can do after disease has been contracted. Barrels of medicine will not do the work of cutting down the death rate that education can accomplish."

Last winter when New York City had an epidemic of grippe, the city's health department taught some valuable lessons in sanitation and manners by an anti-sneeze campaign, carried on by means of bulletins to the newspapers. Besides being good hygiene it was good journalism and caught popular interest.

THE DANGER IN A SNEEZE

"A sneeze is a violent, spasmodic expiration through the nose and mouth," the first bulletin announced. "It usually expels a spray of sputum and mucous discharge containing thousands of bacteria. The person who is sneezing to-day may be catching—and spreading to others by sneezing—colds, grippe, pneumonia, measles, diphtheria, influenza, and tuberculosis. If a handkerchief were placed in front of every sneeze in New York for a few months, the spread of these diseases would be amazingly reduced."

Another bulletin advised: "Don't sneeze or cough in your neighbor's face. Keep out of crowds. If you have only a short distance to go, walk. The Christmas crowds at the festivities, parties, shopping, and in crowded trains have caused the present outbreak of grippe. See that your rooms are well ventilated. Don't overeat. Leave whiskey and other alcoholic drinks alone."

In longer bulletins the department supplied to the public some information about the disease which Dr. Osler once characterized as "Captain of the Men of Death,"—pneumonia. We are constantly in danger of becoming infected by pneumonia organisms, says one of these pamphlets. Why, then, do not more people develop pneumonia, either through auto-infection of lungs or from others?

"The chief reason is that, ordinarily, the individual's body cells and fluids display great resistance. Another, also clearly shown by the work of the Pneumonia Commission, is that the pneumococcus—the chief offender—is quickly destroyed by sunlight and drying, so it does not long survive under the usual conditions obtaining outside of the body. A third reason is that the number of virulent organisms present in health is not as great as the number present in disease; hence, the few usually present can be more easily coped with by the natural defenses of the body."

This, of course, must mean two things in the way of prevention: "First, since the conveyance of these germs is usually by quite direct infection—that is, through particles of sputum expelled in talking, coughing, or sneezing near enough to another person to be projected on the mucous membrane of his lips or nose, or through really direct contact such as kissing—such conveyance may be largely controlled by personal habits. Second, and most important, the individual's resistance should be made sufficient to withstand the entrance of organisms so conveyed. This last is our weak point. We do not know enough about the nature of individual resistance, and about the conditions affecting such resistance, to know whether we may be able definitely to deter-

mine when the resistance is lowered, and just what might be done to increase it."

We know, in short, that fresh air is pneumonia's foe, and that a state of good health reduces the chances of the disease germs to down us—and yet it must be confessed that once in a while pneumonia carries off men who appear to be robust. Their resistance must have been lowered, but the physician sometimes is puzzled to determine how.

I went to an expert on physical condition—Dr. Louis R. Welzmler of New York City's West Side Y. M. C. A.—and asked him if pneumonia found any of its victims among men who appeared to be physically fit. He answered "Yes." Then he hastened to add:

"There is a popular notion that pneumonia makes a specialty of the robust. That isn't true. It carries off some men who appear to be robust, but it certainly makes no specialty of the physically fit. Whether pneumonia kills or not depends upon the virulence of the germ and upon the individual's powers of resistance. Note that it is most fatal at the extremes of life—among children under school age and among old folks. Didn't Dr. Osler once call it the 'friend of the aged'? Men who are debilitated are particularly susceptible; so are men who carry a burden of fat; so are men who lessen their powers of resistance with booze."

"But how about the virulence of the germ?"

"The best way to illustrate that," answered the doctor, "is by a comparison. A country boy goes skating and falls through the ice. A city man, fatigued and hungry, rides home at the afternoon rush hour on a crowded train in the subway. The country kid will get up next morning with a voice like a tin horn, but the chances are that by night he will be all right again. The city man may get up next morning with a severe cold or something worse. Why? Because he was facing a situation which makes a germ gloat in joy. He was fatigued, hungry, worried; when resistance was at a low ebb he proceeded to fill his lungs with germs."

I called to mind the story Captain Rupert Hughes, late of the 69th Regiment,

N. G. N. Y., told not long ago (in *Collier's Weekly*) of the experiences of the militia-men in his command when they started for Mexico:

"A shower came up; it changed to a long, heavy rain. We marched to the camp, an innocent meadow full of lush timothy. It made a lake to wade into and to pitch pup tents in. . . . The regiment waited, hungry and soaked, as the wagons rolled up irregularly and infrequently. . . . Everybody slept in everything he had and wished for more." Pretty rough living for unhardened city men! But—

"Shortly after reveille the sun came out sizzling and warmed us and dried us. There was not a cold in the regiment."

I asked Dr. Welzmler if this was an unusual story. He said, emphatically, that it was not—that inclemency of weather was a far less important matter than germs. This same regiment, when it comes home and begins living in houses and traveling to and from work on crowded cars, will catch its share of colds, like the rest of us, he said. Their protection in camp was fresh air. When these open-air men do return to town they may for a time be more liable to catch colds than the rest of us, for their systems have not had to repel germs, as the systems of the rest of us have had to do. The country man, or the man just back from a vacation, is for a time more liable to colds than the man who has been living in town.

FOUR TYPES OF PNEUMONIA

For the last five years the Rockefeller Institute has been conducting investigations that have shed new light upon pneumonia, and, for the first time, offer hopes of a specific treatment. Any one who investigates this disease learns that the pneumococci, the causative organisms, are constantly present in the throats of most citizens. The Rockefeller studies show that this sweeping statement is only partly true. They have proved the startling fact that pneumonia is really not one disease but four. There are four separate diseases, that is, whose bedside manifestations are so alike that only a laboratory

test can distinguish them. Dr. Rufus Cole and his associates have isolated four different germs, any one of which, finding its way into the lungs, will produce the affliction which the doctors call pneumonia. They have listed them as Type I, Type II, Type III, and Type IV. These four pneumonias differ from one another only in their virulence and the extent to which they prevail. Now it is only the organisms of Type IV that are constantly present in our throats. This type, though especially common, is the least severe of all four. Nearly all of us have known of people who have exceedingly mild attacks of this disease and who rapidly recover. Such people are usually infected with the Type IV organism. But the other three types, all of which are far more severe, do not find their constant habitation in the human fauces. The really severe types of pneumonia, that is, do not come from within but from without. We "catch" them in the same sense that we catch such diseases as typhoid or infantile paralysis, and the Rockefeller workers believe that human carriers are commonly the infecting agents.

WHAT THE SCIENTISTS HAVE DONE

The fact that pneumonia is four diseases, instead of one, explains the failure of previous attempts at serum treatment. For years investigators, in this country and in Europe, have attempted to apply the principle of serum-therapy to pneumonia, with the most bewildering results. The reason is now plain. They would get a serum from the pneumococcus of Type I. If they happened to use this on a pneumonia patient suffering from an infection with Type I, the chances strongly favored a cure. But, in their ignorance, they would use it indiscriminately on all four types. They might as well have tried to cure measles with diphtheria anti-toxin. If serum treatment is to be applied to pneumonia, we shall clearly have to have, not one serum, but four. Before the

attending physician can use one of these serums, a laboratory test—not a particularly difficult matter—will be necessary to determine which one to apply. The Rockefeller investigators are now working hard upon this problem. They have already secured a serum for Type I which gives amazingly satisfactory results. So far as this particular type is concerned, it is safe to say that we already have the cure. And the achievement is no small one, since this type causes more deaths every year in New York than typhoid and diphtheria combined. A serum for Type II also gives fairly good results. Little progress has been made on Type III, and this is unfortunate, as this type is the most deadly of all. On the other hand, it is the least common. The investigators have already gone far enough to learn that they will never get a serum for Type IV. This discovery is no great misfortune since this type, the least virulent of all four, seldom ends fatally.

The word "colds" seems to imply that low temperatures are chiefly to blame for our seasonable ailments. Certain scientists have for a long time vigorously denied this. But Dr. James Alexander Miller and Dr. Willis C. Noble, after two years of experiment conducted under the auspices of the New York State Ventilation Commission, concluded that changes from heat to cold did have an effect in inducing respiratory diseases.

Probably the layman will be a little gratified to hear that cold does have something to do, sometimes, with his "seasonable ailments." But he will do well not to forget that though scientists are not in entire agreement on the relation that temperatures may have to "catching colds," the lesson for him is not materially altered. If he wishes to keep well at this time of year, fresh air, even if it is cold, is perhaps his best ally in staying off colds and all other "cold diseases"—up to and including the most dreaded of all, pneumonia.

MAN AND HIS MACHINES

USEFUL

INVENTIONS

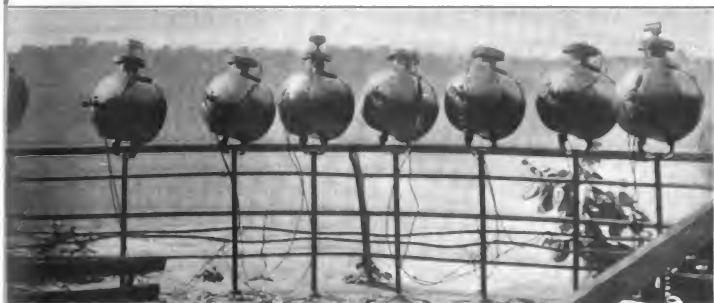


LIGHTING NIAGARA FALLS WITH INCANDESCENT LIGHTS

BY MEANS of a series of incandescent lights Niagara Falls have been made to appear even more beautiful at night than they do in the daytime. To light the Falls twenty-five lights are used at present and each consumes about one thousand watts of electricity. The bulb is contained in a patented hood which embodies a systematic arrangement of the elementary parts of a searchlight, in such a way as to concentrate the maximum value of the candle-power of the light into a beam that gradually spreads to a

great flood of soft, yet brilliant, light that resembles sunlight. It is this latter particular characteristic of the incandescent light that makes it so well adaptable for illuminating Niagara Falls, as it does not detract from the naturalness of the scene as arc lights would, casting, as they do, a very sharp unnatural light. Another advantage of this kind of illumination is that, though the lights cast a brilliant beam, it is not concentrated and therefore diffuses beautifully through the great clouds of mist.

According to present plans, 125 of these lights will soon be installed, for the illumination not only of the Falls but of the Rapids as well.



FOR LIGHTING NIAGARA FALLS

A battery of twenty-five incandescent lamps is used to illuminate the Falls at night. Future plans call for 125 of these lamps to light the Rapids as well as the Falls.



A CONVENIENT INDEX FILE

A device which mechanically finds the desired information in a card index, eliminating the bother of searching through the stacks of cards

A MECHANICAL "LOGICAL ANALYZER"

THE burden of searching through the cards of a card index to find the particular information one desires has been reduced to almost nothing by a device which mechanically selects such information instantly. Information is originally recorded on the cards not in writing but by punching a slot in the card at positions which are the same for similar information on every card. Hence when a rod is thrust through the index at that position and the box is turned over, the rod holds back all cards that have not been punched at that position and allows all cards containing that information to drop. A second rod is used to hold them in place, the box is righted, and the desired cards are all in sight above

the rest. By the use of several rods at once, complex combinations of questions can be answered, the total number of such possible combinations running into the millions. The system is in use for the quick analysis of the investments of insurance companies, for the prompt answering of the complex questions about rentals that are asked of real estate dealers, analysis of payrolls, etc.

A SIMPLIFIED PLOW

A NEW attachment for plows that combines the work of many machines in one has recently appeared in the West and has been used with gratifying results for plowing fields. Only one operation is necessary to put the soil in perfect condition for receiving the seed, whereas the former method was to plow first, then cut the soil up with disks, then harrow, and finally roll the field, employing much time, expense, and labor.

The new device is an attachment for plows, not a plow itself. It consists of a steel-toothed roter standing upright at the right side of the plow, the lower end being fastened to the rear of the share and the upper end to the top of the moldboard. This roter is geared at the top to the shaft of a small, compact gasoline motor which whirls the roter at about 500 revolutions a minute. This rapidly revolving roter catches the liftings from the plow just as the soil turns over off the moldboard and the teeth of the roter shred and tear the weeds, grass, roots, and soil into a finely pulverized mass, throwing it out behind, making a perfect seed bed for the sowing of any crop. A drill attached behind will seed the ground at the same time, if this is desired, completing the plowing, disking, harrowing, cross-harrowing, rolling, and drilling or seeding of the ground in one operation instead of six or seven.



A SIMPLIFIED PLOW

Which combines the operations of plowing, harrowing, disking, rolling, and, with a drill attached, seeding the soil



FOR PRIVATE TELEPHONE CONVERSATIONS

By means of a device invented by an electrical engineer it is possible to carry on a private conversation over the telephone in normal tones although surrounded by people

Weeds, grass, and other "surface litter" all contain plant food elements and this plant nutrition must be put back into the soil to help feed the coming crop. Plowing under this "surface litter" such as weeds and grass is very unsatisfactory, as this simply turns the sod over and deposits the green vegetable matter all in one place and buries it from six to eight inches under ground. The food supply roots of growing grains rarely reach lower than three and one half inches below the surface, and while the old methods of disking and harrowing of the turned-over sod tended to cut up the surface litter and distribute it throughout the soil, the results were far from what they should have been. On the other hand, the device pulverizes this litter and spreads it completely throughout the soil turned up by the plowshare and mixes the whole into a homogeneous mass, thereby greatly increasing the rotting and decomposition of the vegetable matter, causing a thorough, speedy, and uniform fertilization of the soil. Where manure is placed on top of the ground before plowing, it is plain that this, too, is thoroughly mixed in with the soil and not simply "turned under" to decay slowly and deposit its fertilizing values so deep and inaccessible as to be out of reach of millions of hungry plant roots.

A TELEPHONE CONVERSATION SILENCER

AN ELECTRICAL engineer of New York City has recently invented a device whereby a person may conduct a private conversation over the telephone even though surrounded by people. The instrument is so small that it may be carried around in the pocket and is not attached in any way to the telephone instrument itself. The person using the device merely holds it directly in front and a few inches away from the telephone mouthpiece and talks into it in the usual manner. His voice, which is pitched

in its usual tone, becomes inaudible a foot away, but can be heard distinctly by the listener at the other end of the telephone.

A TREE PLANTING MACHINE

A MACHINE which plants from 10,000 to 15,000 forest tree seedlings a day has recently been used at the Letchworth Park Forest and Arboretum, in Wyoming County, N. Y. Previously the planting had been done by hand at the rate of 1,200 to 1,500 trees each day per man.

The machine was originally designed to set out cabbage and tomato plants, but works equally well with trees. It is about the size of an ordinary mowing machine and is operated by three men and two horses.



A MACHINE FOR PLANTING TREES

It plants from 10,000 to 15,000 forest tree seedlings a day, and has recently been used in an arboretum in New York



NEW HEADLIGHTS—

By means of narrow horizontal strips of glass the light of this automobile lamp is cast on the road and not diffused

One man drives the team while the other two handle the seedlings. The machine makes a furrow in which the trees are set at any desired distance, and an automatic device indicates where they should be dropped. Two metal-tired wheels push and roll the

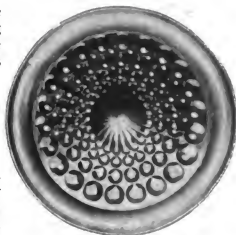
dirt firmly down around the roots. Two attachments make it possible to place water and fertilizer at the roots of each seedling, while another attachment marks the line on which the next row of trees is to be planted.

State officers claim that the cost will be much less than when the planting is done by hand and furthermore that the machine can be used on any land which has been cleared and is not too rough for plowing and harrowing.

NEW STYLE HEADLIGHTS

THE laws against the use of glaring headlights on automobiles in some states have become very stringent of late owing to the many serious accidents which resulted from the drivers of cars becoming temporarily blinded by the lights on cars approaching from the opposite direction.

At first the plan of dimming the lights of the automobile was tried out, but this proved almost as unsatisfactory as the glare, for the eye could not accommodate itself quickly enough to the change from the intense light to almost complete blackness.



—TO PREVENT GLARE

The front of this lamp is composed of a series of lenses and each ray of light is broken up into a spray

However, new styles of headlights bid fair to solve the difficulty and meet all legal requirements.

In one of these the glass front of the headlight is composed of a series of strips of glass arranged so that the beams of the light are concentrated on the ground itself and not diffused on the surrounding country. The two illustrations at the bottom of the page show the difference in the lighting of the road by the ordinary light and by the new device.

In the other style of lamp the glass front is composed of a series of lenses. Each ray of light is broken up by these lenses and every bit of light is diffused in a spray that covers almost 180 degrees with a greater force in front and a gradual reduction of intensity toward the side.

So that by the use of these lenses it is possible to see the entire road at all times and yet not interfere with the drivers of automobiles traveling in the opposite direction.



ANTI-GLARE HEADLIGHTS

The picture on the left shows the effect of an ordinary automobile light throwing its glare directly in the face of oncoming drivers. The picture on the right depicts the light shed by a new style headlight which casts its beams directly on the ground

The World's Work

ARTHUR W. PAGE, Editor

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PRESIDENT-RE-ELECT WILSON

THE FIRST DEMOCRATIC PRESIDENT SINCE ANDREW JACKSON TO SUCCEED HIMSELF AND THE FIRST PRESIDENT SINCE 1876 TO BE ELECTED WITHOUT THE SUPPORT OF THE STATE OF NEW YORK, HIS RETURN TO POWER BEING DUE CHIEFLY TO THE REMARKABLE INDEPENDENT VOTE IN THE WEST

THE WORLD'S WORK

DECEMBER, 1916

VOLUME XXXIII



NUMBER 2

THE MARCH OF EVENTS

AFTER all, a Presidential election determines only an administration, not a government. The government is the people. Their intelligence, their character, their will, are its guiding hand, its conscience, and its effectual instrument. No President or Congress whom they select can misrepresent them very much. Granted that the public mind is awake, the public conscience aroused, even so august an incident as a national election is only an incident in the steady flow of the country's life.

Happily, the results of the election just past prove that the people did not go sleepily to the polls. They were more discerning than the politicians, who were neither clever enough nor courageous enough to join the issues squarely. The people faced them as they saw them, as the independence of the voting clearly indicates. On the Atlantic seaboard, where external dangers are naturally most plainly visible, the issue of the Nation's foreign policy largely controlled the outcome; while in the West, where political liberalism in internal affairs was most appreciated, that policy was upheld and strengthened. In many states an unprecedented number of "split" ballots were cast—the voters preferring a President of one party and Congressmen of another. These

are symptoms of health. They offer nothing but encouragement and hope to the patriotic citizen.

The women's share in the election did not alter the result. Its effect was upon the women, not upon candidacies or issues. Women have shown that they will use the ballot when they have it. The election was a step in their political education, and in that sense its future effects may be profound—always remembering that while the suffrage movement has been forwarded by radicals the habit of women generally is more conservative than that of men.

So close an election does not give the Administration of the next four years a warrant for any radical change in the conduct of affairs. The tariff, the Federal Reserve Act—all the substantial body of improved domestic law—are safe from essential alteration. Our position in foreign affairs is made stronger, because the election has disposed of the issue of a divided nation—there is no "foreign vote" of any moment. The American people are one people, and their allegiance has been emphatically renewed to their own government. We have decided neither for peace nor war: we have decided above all that we are for America first, and thereafter for that policy which rests on such counsels as the wisdom, courage, and forehandedness of a free people may devise.



CAPT. JOHN HAY BEITH ("IAN HAY")

THE SCOTTISH SCHOOLMASTER-NOVELIST WHO LAID DOWN THE PEN FOR THE SWORD AT THE OUTBREAK OF THE WAR, WON THE MILITARY CROSS, WROTE "THE FIRST HUNDRED THOUSAND," ONE OF THE BEST BOOKS ON THE WAR, AND IS AT PRESENT VISITING THE UNITED STATES TO MANAGE THE BRITISH SECTION OF THE ALLIED BAZAARS THAT ARE BEING HELD IN THE VARIOUS CITIES



MR. WILLIAM D. GUTHRIE

PRESIDENT OF THE RECENTLY FORMED AMERICAN SOCIETY FOR THE RELIEF OF FRENCH WAR ORPHANS, WHICH HAS SET OUT TO RAISE A FUND OF \$130,000,000 AS A PRACTICAL EXPRESSION OF AMERICA'S GRATITUDE AND SYMPATHY FOR FRANCE



THE DUKE OF DEVONSHIRE

WHO, AS GOVERNOR-GENERAL OF CANADA, SUCCEEDING THE DUKE OF CONNAUGHT, WILL ASSUME A LARGE SHARE OF THE RESPONSIBILITIES OF FINANCE AND DEVELOPMENT THAT CONFRONT CANADA, BOTH NOW AND AFTER THE WAR



CONTROLLING THE DESTINIES OF CHINA

LI YUAN-HUNG (LEFT), WHO SUCCEEDED YUAN SHIH-KAI AS PRESIDENT OF CHINA, AND TUAN CHI-JUI (RIGHT), THE SECRETARY OF STATE. THEIR ATTITUDE TOWARD THE UNITED STATES IS EXPLAINED IN DR. JEREMIAH W. JENKS'S ARTICLE IN THIS MAGAZINE [See page 165]



THE U. S. S. "ARIZONA"

THE LATEST ADDITION TO THE UNITED STATES NAVY WHICH, WITH HER SISTER SHIP, THE "PENNSYLVANIA," IS CONSIDERED BY NAVAL AUTHORITIES TO BE THE MOST POWERFUL FIGHTING VESSEL AFLOAT

[See "The March of Events"]

THE END OF THE GERMAN PROPAGANDA

THE election has closed one chapter in American history in a way that reflects the utmost credit upon the American spirit and American institutions. The phantom of German-Americanism, which has been haunting the United States for the last two years, has definitely been laid. Apparently there is no such thing as the German-American vote—at least it does not exist in strength large enough to turn the balance in elections. The millions of Americans who trace their ancestry to Germany are Americans and nothing more. This is perhaps the finest lesson taught by the election.

The states that hold the largest German population are New York, Ohio, Illinois, Wisconsin, Nebraska, Iowa, and Missouri. Three of these, Ohio, Nebraska, and Missouri, contrary to the fondest hopes of the German propagandists, voted for Mr. Wilson. This in face of the fact that Ohio, the mother of Republican Presidents, has for fifty years been a great Republican stronghold. In the other states the people voted apparently in accordance with their predilections, with little reference to the Germanic propaganda. Mr. Hughes won New York, but by a much lower plurality than Mr. Whitman, the candidate for governor, clearly showing that the Republican sweep in that state, not German votes, carried the day. When we examine the returns in the large German cities, the absurd pretensions of professional hyphenates become even more apparent. The most German city in the United States is Milwaukee. And Mr. Wilson won there by a handsome plurality! St. Louis, which is also one of the strongholds of Germanism, also voted for the President. Cincinnati, and the rest of Hamilton County, which were depended on to swing Ohio for Mr. Hughes by the mere strength of the German-American citizens, failed to fulfil this expectation. Mr. Hughes carried Cincinnati, indeed, but by a vote not exceeding the normal plurality. New York City's small Democratic plurality, about 40,000, does not indicate the pro-German influence. The fact is that Mr. Wilson got

more votes than Democratic candidates for state and local offices who were running on the same ticket.

A closer examination shows results that were even more striking. The pro-German propagandists issued a blacklist against all Congressional candidates who had voted against the McLemore resolution. But it accomplished nothing. Mr. Martin Ansorge, who issued an appeal to voters, promising to work for a munitions embargo in Washington, was defeated by Mr. Murray Hulbert, the Democrat, who voted against the McLemore resolution. Congressman William S. Bennet, of New York, a cultivator of anti-American votes, suffered defeat. So did Mr. James E. Martine, the New Jersey Senator who has most aggressively stood for Germanism in the Senate. Mr. Frank Buchanan, a Congressman whose activities in the pro-German propaganda led to his indictment, has likewise lost his seat.

We may hope, therefore, that we have heard the last of this alien influence in American politics. The election has shown that there is not only no German vote, but no labor vote, no Catholic vote, no Jewish vote, no women's vote—nothing but an American vote. After all, this was the main question—the only dangerous issue; and this has been settled satisfactorily.

THE INDEPENDENT VOTE

ONE of the most cheering aspects of the election is the size and diversity of the independent vote: California perhaps most clearly illustrates a process that is affecting the political life of the whole Nation. It is by tradition Republican—and the tradition has been fostered by the influx, since 1890, of large numbers of citizens from New England, Illinois, and Iowa. Los Angeles is often called "a suburb of Boston," and Central California nowadays might as aptly be called "a suburb of Chicago." The election of 1896 came at the end of a long period of desperately hard times in the state, and before the full tide of Republican immigration set in; and the electoral vote was split by Mr. Bryan. But for the next fourteen years California was as safely Re-

publican as Vermont. In consequence, the Republican Party became a "machine" and the machine became a mechanism for the convenience of private interests and for the suppression of political reforms; while the Democratic Party became, likewise, a machine through the apathy of a hopeless minority of voters.

The liberal Republicans made a dash for liberty in 1910, but to win they had to enlist the liberal Democrats with them, and so became practically a non-partisan organization in the election of Mr. Hiram Johnson and a legislature that was progressive before it was Progressive. The fidelity with which the Johnson administration kept its pledges of reform made easy the transition of the state into the Progressive column in the national election of 1912. When Governor Johnson went back into the Republican Party to run for the United States Senate in 1916, the state retained its loyalty to him in return for his loyalty to the state; but it did its own thinking on the Presidency and registered, by its extremely close vote, the average of opinion the country over—namely, that Mr. Wilson and Mr. Hughes both stand essentially for a liberal and not for a reactionary administration of affairs.

California is typical of this political ferment because it is typical also in the ferment of its life in general. The states most subject to political change are those in which populations are changing, business is altering, and the stimulation of new ideas of all sorts is most apparent. For example, California and Pennsylvania are both primarily agricultural and mineral states, but they are as the poles apart in their social structure—the people of the former still finding their way about to permanent homes and business connections, the people of the latter deeply rooted in an ancestral soil and tied to long-standing relations in their economic life.

But what is perforce the condition in California is becoming more and more the condition the country over. People move about more, and rub more against new ideas. This fact is the hope of the "Solid South," and it is the political hope of the Nation. Independence in politics is increasing.

HOW THE WOMEN VOTED

THE voting in Chicago apparently answers some questions which figure conspicuously in most discussions of woman suffrage: Do the women really want the vote? Will they use this privilege to any extent if they once get it? Will they manifest some new and essentially feminine vagaries in politics, or will they divide on the issues in about the same proportion as the men?

Illinois wisely tabulates the votes of women separately from those of the men, and so sheds light upon these several points. The result shows that, in political psychology, the feminine mind apparently differs little from the masculine mind. The women of Cook County, which includes Chicago, gave Mr. Hughes about 135,000 votes and Mr. Wilson 130,000. Clearly we need not analyze such statistics in any detail, since they indicate only one thing, and that is that the women voted just about the same as men, in accordance with their varying intellectual appreciation of the issues and with due regard to their predilections and prejudices. Mr. Hughes's position on woman suffrage was generally supposed to be more satisfactory than Mr. Wilson's. If any single issue could solidify a "women's vote," clearly here was the one to accomplish it. But the women apparently ignored this issue; certainly Mr. Hughes's stand on suffrage does not explain his small plurality. The women may have voted as their fathers and brothers did, or they may have not; this particular point is not determined and is not important; the result simply shows that the feminine mass divided just about the same as the stronger part of the population. The same holds true of Wyoming, Washington, and other states which, defying all the prophets, gave Mr. Wilson his amazing success west of the Mississippi River.

But the Chicago election apparently does prove that the women, at least the women of Chicago, desire the ballot and will exercise it. Their registration fell somewhat below that of the men, it is true—303,000 against 503,000—but it was still sufficiently large to represent a genuine wish to play a part in public affairs. Nearly 90 per cent. of the

registered women voted, an excellent average for men in any part of the country. In the whole state about 720,000 women and 1,200,000 men cast their ballots, and nearly one half of the United States is today a field for women's political activities.

LESSONS OF THE "U-53"

IN APRIL of this year the German Government pledged the United States that German submarines would not sink merchant vessels "without warning and without saving human lives, unless the ship attempts to escape or offers resistance." In early October, a German submarine, the *U-53*, appeared off Newport, R. I., remained there several hours, put to sea, and sank five ships, three English and two neutral. The happening, for several reasons, has produced a sensation in this and other countries. What does it mean? What is its bearing upon Germany's pledge and how is it likely to affect the American attitude on the war?

The whole subject may be considered from two points of view, one the strictly legalistic, the other as a question of national policy—its bearing upon the friendliness or unfriendliness of the German attitude. Our State Department has apparently taken the stand that this submarine performance does not violate international law and does not contravene Germany's explicit promises. Apparently the submarine warned the ships and accomplished their destruction without taking human life. There are those, however, who differ with our State Department. The serious point is that the German submarine turned the crews and passengers adrift in life boats, leaving their rescue to chance or to the American destroyer fleet. This, says Mr. Ellery C. Stowell, assistant professor of international law at Columbia University, is a matter of "doubtful legality." Consider the case of the *Stephano*. This ship was on her way from Halifax to New York, carrying ninety-four passengers, many of whom were American citizens. These passengers, as well as the crew, were placed adrift in boats at eight o'clock in the evening, practically in the dark, in a rough sea, sixty miles away from

the nearest land. Is this in accordance with the German pledges not to sink merchant vessels, "without warning and without saving human lives?" Had the American destroyer fleet not rescued these men, women, and children thus cast upon the dark Atlantic by the German Empire, how many of them would ever have reached dry land? Indeed, in our lengthy correspondence with Germany on the submarine question, that Government has explicitly said that leaving passengers in open lifeboats is not taking adequate provision for the passengers' safety. The mere fact that a large American destroyer fleet had to rescue the people in these boats in itself indicates that the German submarine had taken no precautions for their rescue. The German Government explicitly pledged itself not to sink ships "without warning and without saving human lives." Clearly it did not save these human lives, for it was the American Navy which did that. Had these war vessels not been near at hand, many passengers might conceivably have been lost. Even from the standpoint of strict legalism, therefore, Germany has violated her pledge. Our Government, acting on the basis of the correspondence which has passed between the two nations, would have been justified in handing Von Bernstorff his passports. The attack upon the *Marina*, resulting in the death of American citizens—an attack apparently made without warning—raises this whole issue in an even more serious form.

II

What do these performances mean? Are they merely the beginning of submarine operations on a large scale, perhaps conducted according to the German pledge, and perhaps not? Was the *U-53* sent merely as a "feeler," to sound our Government and learn what its attitude would be on such operations outside of the three-mile limit? Is it merely preliminary, as the English papers believe, to a wholesale resumption of the submarine campaign? It is no secret that, up to April 18th, when the German Government gave its famous pledge, there had been a heavy mortality in German submarines. That this loss had much to do with Germany's change of

heart—or half change of heart—seems likely. But seven months have passed, and during this time the German shipyards have been turning out submarines on a large scale. Many of them, as we have cause to know, are huge, seagoing affairs, such as the *Deutschland* and the *U-53*. With a considerable fleet of this kind on hand, the temptation to use them must be almost overwhelming, especially to a nation so fond of military exploits, and so hard-pushed in a military sense, as Germany. It would manifestly be safer to blockade the British Isles by way of New York, Baltimore, and Boston than by way of the North Sea, since England's favorite method of catching submarines, by nets and submarine bombs, would be rather difficult to use in our waters. Germany would have to establish some base in this neighborhood, but, since she has been able to establish submarine bases off Scotland and Ireland, it is not inconceivable that she might establish one, for example, in the West Indies, or in other near-by territory.

III

On October 1st, a few days before the *U-53* indulged in these exploits, the *Berliner Tageblatt* published an article by Dr. Bernhard Dernburg, already known for his press-agent activities on American soil, and widely heralded as holding confidential relations with the German Government. This article more than hinted at the early revival of submarine warfare. "In Germany," says Dr. Dernburg, "public opinion is divided on the question of submarine warfare, which we have relinquished, with reservations. We hope that we can overcome our enemies under present conditions, but, if no other choice is open to us, and we cannot otherwise win the victory necessary to our continued existence, we must not forego the use of any weapon that lies ready to our hand. That, too, is becoming better understood in America. But it is to be hoped that time and opportunity may be given to the American people to continue in its change of attitude and decide which is more to its advantage: an England in control of the sea and arrogant from victory, or a Germany whose peace ambitions are known

across the ocean and in no wise resemble strivings for undisputed world dominion."

In other words, unless the United States behaves itself and shows an increasingly accommodating spirit toward Germany, the German submarine policy may be resumed. The visit of the *U-53* sufficiently warns us that the North Sea and the Mediterranean will not be the only fields of operations. The realization of such a plan would certainly bring the war to our doors. It would revive the submarine issue in even uglier form than that in which it vexed us a year ago, for, so long as Germany kept without the three-mile limit and destroyed no ships without warning and without saving the human cargo, she could plausibly claim that her acts were entirely legal. On the other hand, it is quite certain that the American people would never consent to a continuous campaign of this sort. We do not care to have our waters constantly filled with non-combatants adrift in boats; we would not for long tolerate a situation in which our destroyer fleet should be a handmaid to German submarines, to act practically as auxiliaries to them for the saving of our own citizens' lives which they imperil; nor could we submit to a situation which would constantly threaten some mishap that might plunge us into the war. Our destroyer fleet might not always arrive in time to save the drifting passengers; the German submarines might at any time sink an American ship; or an English destroyer, hunting out its prey, might easily send an American submarine to the bottom. Thus the situation would be an intolerable one and Germany, by raising this new issue now, can hardly be regarded as having acted otherwise than in an unfriendly spirit toward the United States.

IV

One good turn, however, the *U-53* has done us. It has destroyed forever the ridiculous idea that three thousand miles of water furnishes us an insurance against war. It has demolished the illusion that America is isolated from Europe. England, by virtue of Canada, is a next-door neighbor, and Germany, by grace of the submarine, can almost shake hands with us across the sea. In a military sense at

least we are really part of the European system. By concretely demonstrating this fact in time, Germany has really done us a great service. It remains for us to act upon the hint.

"THE NEXT FIVE YEARS OF THE NAVY"

FOR the next five years the United States will be engaged in one of the most constructive works in its history. That is the building of its new navy. We have decided to spend \$500,000,000 in that period in new construction alone; the building programme calls for 157 ships, for a new personnel, for a new naval organization. We have set out to obtain something which we have never possessed—a completely equipped and completely organized fighting force at sea.

So far as we can obtain such a fighting force by passing a law, we have obtained it. But votes of Congress and even huge appropriations of money do not create a navy. Only an intelligent patriotic purpose can make this programme a reality. We must have not only the will to do it; we must know how. Dozens of practical problems arise, dealing with ships, with personnel, with distribution, with organization, with strategy. Fundamentally the American people must be educated so that they will gain some comprehension of what a navy really is. What has the European War taught us? What are the naval problems the United States will have to solve? What possible dangers threaten us? Why do we need battleships, battle cruisers, scouts, submarines?

Few men can better answer these and numerous other questions than Rear-Admiral Bradley A. Fiske, retired, of the United States Navy. Few American naval officers enjoy so high a reputation, not only in this country, but in Europe. Beginning with the January *WORLD'S WORK*, Admiral Fiske will contribute a series of articles, the title of the first of which, "The Next Five Years of the Navy," gives an idea of their scope and interest. Admiral Fiske, in other articles, will discuss the lessons of the European War, especially their bearing upon our own navy, strategic problems,

and crises that the Nation may be called upon to meet. His articles will be of deep interest to any one who really wishes to understand the great national enterprise in which we are soon to engage.

OUR DIPLOMACY AND JAPAN

WHATEVER official explanations may be made, few episodes in our relation with Japan have produced so unpleasant an impression as the attempt of this Power, on October 14th, to veto the contract to repair the Grand Canal in Shantung, granted by the Chinese Government to an American corporation. International relations are not established by friendly editorials in newspapers or after-dinner speeches, but by the facts in the situation. The recent circumstance constitutes a particularly disagreeable fact. Upon those Americans who have only a newspaper-reading knowledge of Asiatic problems—and few have more—the whole proceeding seems greedy, offensive, and insulting. Japan practically notifies the world that certain parts of China are her economic provinces, with which America is not to interfere. The action is unfriendly and, unless resented, means a serious handicap to American progress in the Far East.

It is true that Japan can make out a plausibly legal case. The proposed canal work is to be done in the province of Shantung—the province which, with Kiao-chau, formed the German "sphere of influence" in China. The treaty under which China surrendered this concession to Germany gave that Power control over the larger part of Shantung. Were Germany in undisputed possession to-day, China would thus not have the legal right to make any contract with Americans, for only Germany herself could do that. But Germany, as we well know, has lost her influence in Kiao-chau, having ended her little empire in the Far East. The claim is now made that Japanese "influence" has taken the place of German, and, according to the fixed principle, Japan has fallen heir to all the rights and privileges which Germany formerly enjoyed in Shantung. Not China, therefore, but only Japan, had the right

to enter into the arrangements with the American canal contractors.

But there is more to this situation than mere technicalities. When Japan, in the fall of 1914, started to destroy German power in China, she announced that her purpose was to restore this territory to China. Japan's intention, therefore, was not to occupy herself such treaty rights as Germany possessed, but to restore the Chinese control. That being the case, it would appear that China had at least a moral right to make its contract with the Americans, and that the recent Japanese protest was not only unwarranted in law, but an act of impudent aggression against a friendly Power.

There is little doubt that Japan and Russia purpose to shape the destiny of the Far East. Their alliance shows that in itself, and the appointment of Japan's great jingo, Count Terauchi, as Premier, emphasizes it still further. The new Premier is a man whose reputation is almost entirely military; he stands for the largest possible military and naval programme and for an assertion of Japanese overlordship in China. Part of his platform, the newspapers report, is the exclusion of neutrals from Chinese trade. His elevation has shocked the more sober-minded Japanese newspapers, which have publicly bewailed it as an unnecessary slap at Washington. It has caused almost as much uneasiness in England and France.

Among the many foreign problems affecting the new Administration, this one of our Far Eastern relations is by no means the least important. There is little likelihood that Japan will cause us any great annoyance on the California issue, for the question involved there is chiefly sentimental and does not affect her material interests. But the control of China affects her whole economic life, and, therefore, her future as a nation. So far as we are concerned the question is direct and simple: are we prepared to insist upon our treaty rights with China and to demand freedom to trade in and to help develop that empire, or are we ready to shut our eyes and let Russia and Japan apportion it peacefully among themselves? In the latter case we shall have no trouble (though great loss),

but in the former the waters will not be such smooth sailing. Fundamentally, that is the meaning of these two recent happenings—the protest against the American contract and the elevation of Terauchi. With this question, with the Mexican problem, and with the European War, the next four years promise to be historic in American diplomacy.

THE GOVERNMENT PAYS ALIMONY

IN THE Ashbrook pension bill, which passed the last session of Congress, the American Government for the first time offers certain of its women citizens an insurance against unsuccessful marriage. Up to the present time a pensioned soldier's widow who remarried automatically disappeared from the pension rolls. But now, under this new legislation, she can resume her pensionable status on the death of her second husband. But the law does far more than that. In case such a soldier's widow marries again and is divorced from the second husband for causes that reflect no discredit upon herself, she again automatically regains her pension. Evidently remarriage is thus made safe for soldiers' widows; the sacred institution, so far as they are concerned, loses its traditional character of a lottery. Taken in connection with the easy divorce laws of many states, the eligible soldier's widow runs not the slightest risk. She enters the state with the foreknowledge that, if the prospective husband prove unsatisfactory, the Government stands ready to protect her against the financial consequences of having made a bad choice. Such a widow has her alimony provided for in advance; for there stands the Federal Treasury, which, on presentation of a divorce decree, places the happy "grass widow" upon the Federal payroll at a rate of from \$12 to \$30 a month.

This pension wonder contains other interesting provisions, which, in the press of army legislation, navy bills, appropriations for good roads, nitrate plants, and armor factories, have so far escaped public attention. It advances to the pension roll many thousands of widows who have been storming it for years. The original pen-

sion law granted allowances only to "War widows"—that is, women whose husbands had been killed in the Civil War. But Congress, in 1890, passed a law which "covered in" all the women who had married soldiers up to that date. This legislation caused tremendous protest at the time, as it was claimed that young women, born, in many cases, after the War, had married veterans merely for the purpose of ascending the pension roll after their husbands' death. It was said that the passage of this law in 1890 would stimulate the practice; that young women could safely contract such marriages under full assurance that Congress would move the date ahead again. For twenty-five years a vigorous pension campaign has been waged to this end. In this Ashbrook law it has now triumphed. Any girl who married a soldier before 1905 will draw \$20 a month for life after his death. Here, for example, is a girl, aged twenty-two in 1905, who marries a sixty or seventy year veteran. She herself was born in 1883—nearly twenty years after the War ended. On her husband's death—and naturally he could not survive the marriage long—she gets \$20 a month for life. If she lives until she is ninety, she will draw this pension, merely because she had the foresight to marry a poor old veteran who was tottering toward his grave.

LESSONS OF THE EPIDEMIC OF INFANTILE PARALYSIS

THE epidemic of poliomyelitis, which is now drawing to a close, has made the recent summer the most distressing in many years, but it has brought, also, certain compensations. New York City, where the epidemic reached its greatest virulence, has had one remarkable experience. Though there were more than 2,000 deaths from poliomyelitis, the general death rate has increased only minutely—from 14.49 in 1915 to 14.50 in 1916. Infant mortality has actually fallen below that of the previous year. In 1915, when there was no infantile paralysis, the death rate of children under one year was, for the first thirty-five weeks, 105; the corresponding figure for this year is only 95.

Remarkable as these results seem, there is no particular mystery about them. This mortality decrease, periodical as it at first seems, is directly traceable to this devastating epidemic. For, because of that epidemic, children have had unusual care in the last summer, and the city has been kept in a highly sanitary condition. New York, and presumably other cities, have had campaigns of education in public health hitherto unknown in their history. Ordinarily health workers have difficulty in persuading the people to follow the simple rules of hygiene, but the fear of poliomyelitis has this year provided an effectual stimulus. Tenement houses have never been so clean, food has never been kept so free of pollution, medical advice has never been so carefully followed, and parents have never been so careful about keeping their children free from contamination. Tenements have been constantly inspected, streets regularly flushed, violations vigorously punished, health leaflets have been distributed and read by the thousands, civic organizations and newspapers have given endless attention to health matters. All these energies were concentrated upon one infection, yet the result has been to make the city cleaner and more wholesome and, despite a devastating epidemic, freer from disease.

This experience has its lesson, not only for New York, but for all communities. We know now, as we never knew before, precisely what an intelligent health campaign can accomplish. Probably New York, which already stood high for the excellence of its health department and its low death rate, will not relax its efforts. It has learned much in the act of keeping the city clean and will probably make permanent the wholesome conditions that now prevail. If the experience of last summer improves conditions the epidemic may become, not a calamity, but a blessing.

A NEW ERA IN DOLLS

PLEASANT news reaches us from the American manufacturers of toys—members of a new industry, who, like our dye makers, are one of the consequences of the European War. The

day of the old-fashioned German doll has gone, probably forever. She was always an unnatural, artificial product, with her porcelain face, painted like a chorus girl, her popping blue eyes, her mass of unvarying golden hair, her highly colored "ruby" lips. No single thing in the nursery was the cause of so many domestic tragedies. Drop her on the floor, and the head would usually go flying into a dozen parts, and legs and arms constantly bled sawdust so profusely as to suggest the carnage of a European battlefield. No object was quite so disreputable in her youthful old age; the smudgy cheeks, the caved-in head—a head woefully subject to premature baldness; the frequently armless and legless trunk, though they never decreased the affection in which the little derelict was held, were a cause of endless anxiety to sanitarians. Possibly babies and little children looked like that in Germany. But that is not the kind we grow in the United States. Little girls who could easily manufacture a baby out of the family rag-bag had no difficulty in mothering one of these queer products of the Germanic genius, and so millions of Americans have been brought up on them. But their day, we are told, is over.

The European War, which had ended most kinds of immigration, has shut out these little wanderers. American genius, which is now being called upon to manufacture coal-tar dyes, hexamethylene, and manicure scissors, is also turning its attention to dolls. Our success has been so great, we are told, that not only shall we not import any more dolls from the Fatherland, but that we shall probably sell them in Nuremberg itself! For our doll makers have turned realists. Their products are individualized like a real baby. No more unglazed porcelain faces; these American dolls are really flesh color and their heads have the additional value of durability. A severe blow with the hatchet may destroy its beauty, but numerous droppings and tumblings down stairs will produce no effect. These little creatures are already so popular that our toy factories are running day and night to supply the demand. It is one of the pleasanter aspects of the war.

A CENTURY OF SAVINGS BANKS

DECEMBER 2d of the present year is the one hundredth anniversary of the inauguration of savings banking in the United States.

On that day of the year 1816, the Philadelphia Saving Fund Society, a voluntary association that was chartered by the state in 1819, began to receive deposits. Eleven days later, on December 13, 1816, the Provident Institution for Savings in the Town of Boston received its charter from Massachusetts and opened its doors for business. In March, 1818, the Savings Bank of Baltimore began operations. And on July 3, 1819, a fourth institution, the Bank for Savings in the City of New York, welcomed its first depositors.

History accords to these four institutions equal honor and credit for doing the pioneer work of encouraging thrift in the United States, although it appears that the idea underlying the movement found expression first in the organization of the Bank for Savings in the City of New York. That institution owes its origin to the efforts of Thomas Eddy, a New York City merchant, friend of Patrick Colquhoun, a London magistrate who was at that time the leading English advocate of "frugality," or savings banking. Its organization was proposed at a meeting of prominent citizens, at which Mr. Eddy presided, in November, 1816; a constitution was adopted and directors were chosen, but it was deemed unwise to begin operations without legislative authority, which was not granted until early in 1819.

Other communities soon began to follow the example set in these larger centres of population, and the savings bank movement spread slowly throughout the States. In 1820 there were ten banks of this type in existence, with 8,635 depositors and \$1,138,576 in deposits; in 1840 there were sixty-one banks, with 78,781 depositors and \$14,051,520 deposits; in 1860 there were 278 banks, with 693,970 depositors and \$149,277,504 deposits; and now there are 2,159 banks, with 10,686,000 depositors and \$4,700,000,000 deposits.

Side by side with the savings banks, other important agencies for the encouragement of individual thrift have grown up. In the postal savings system there are now 7,687 offices accepting deposits, and their 612,000 depositors have nearly \$90,000,000 to their credit. Latest figures furnished by the Comptroller of the Currency show that there are 4,793,670 strictly savings depositors in the national banks with \$919,731,000 to their credit. State banks have 3,400,000 savings depositors with \$600,000,000 to their credit; trust companies 2,500,000 depositors with \$1,053,000,000; and private banks 100,000 depositors with \$1,800,000. Then there are the coöperative building and loan associations, similar in purpose to the savings banks, having assets of \$1,500,000,000 belonging to 3,000,000 shareholders; and last, but not least, the school savings banks, of which there are nearly 2,000, with 400,000 depositors credited with \$1,800,000.

Thus, the combined result of this first century of thrift campaigning is that nearly 9 billion dollars has been transformed into capital—the kind of money that works and serves the Nation as well as its individual possessors; for that is the function of those different types of institutions.

To commemorate the savings bank centennial, the American Bankers' Association has carried on, this year, an intensive thrift campaign throughout the country, with the coöperation of organizations like the Young Men's Christian Association, the Young Women's Christian Association, the National Americanization Committee of Immigrants in America, and the Chamber of Commerce of the United States.

The aim of this campaign has been not merely to gather more dimes and dollars into the banks, but rather to acquaint more people with the real potential purchasing power of money—to teach them how to spend wisely, and to familiarize them with the principles that underlie sound investment.

It is a truism that both the social and economic life of a nation depend for their stability, in the last analysis, upon the

extent to which its individual citizens can be made to realize the evils of waste and extravagance. Yet those who have studied the question closely think it safe to say that not more than one person in five in this country makes efficient use of the resources at his command.

Gratifying as the results of the Centennial Thrift Campaign of the Bankers' Association have been, there continues to be great need for the exertion of equally intelligent and broad-minded effort in that direction.

OUR INTERNATIONAL UNCONSCIOUSNESS

WHEN the war broke out in August, 1914, the people of the United States weighed the evidence of each side and pronounced overwhelmingly a verdict of sympathy for the Entente Allies. The violation of Belgium was usually the verbal reason given by the man in the street for his decision against Germany; but actuating this expression were the underlying fundamentals of the foundation of this Government, the principles of democracy against autocracy, and the feeling that the victory of Germany meant an actual, definite danger to the United States. Added to this was the subconscious sympathy of the American people for the under-dog—especially Belgium and France. This first sober decision of the country has never changed; for a long time it was strengthened by the methods of warfare pursued by the Germans; by their propaganda and violence in the United States; and finally clinched by the submarine atrocities which started with the sinking of the *Lusitania* and are still not definitely a settled question.

But there has never been an international consciousness in the United States. We have had our internal consciousness aroused and educated by elections every four years, by carefully planned campaigns of nearly every department of the Government, and by our institutions of instruction. The public has demanded information and explanation regarding our internal future. The Departments of the Interior and Agriculture have long conducted educational

campaigns in response to this demand. The War, Navy, and Treasury departments have recently taken up the people's education. The great cry for a national consciousness was raised before the last election. Little has been said about an international consciousness except the oft-repeated, vague phrase, "We must now take our place in the council of nations."

The American people have practically always left the care of their international relations in the hands of the State Department and the President, asked few questions, and followed blindly the lead given them. They have felt that international relations were a great mystery which no layman might dare to inquire into for fear of upsetting the delicate wheels of diplomacy. This is a correct point of view regarding many negotiations at the time they are going on, but it does not and should not hold that forever the State Department should be the crypt for all the information on which the public can base its judgment of a foreign policy.

It has been just this situation that the German propagandists, awakening late to the futility of their campaign of frightfulness, have taken hold of and used to telling effect. Instead of the State Department educating the people, German professors, pro-German societies, German-Americans have used every means of publicity and political threats and cajolings to mold the international opinion of the public. In this they have been helped by the blunders of the Allies and their unwillingness to imitate the Germans in press campaigns in the United States. The State Department, the only authoritative American source of information, has kept silent, giving out very few facts to help the people form a clear, unbiased opinion.

Many private individuals have undertaken to educate the public into an international consciousness in favor of the Allies, but at most it has been haphazard and often as biased as the organized pro-German propaganda.

The paid German propaganda—emanating chiefly from German sources—has partially succeeded in beclouding the issue—has twisted every move of the Allies to redound against England, thus aligning

on its side the Irish and others who have been brought up with an ingrained opposition to England. Thus the war between democracy and autocracy (the fundamentals for which this war is being fought) and the definite danger to the United States in case of a German victory and the horror of the methods of frightfulness employed by the Germans are being lost in a maze of German attempts to educate the United States into their conception of an international consciousness—a conception which not only actually subverts what little we know of international affairs, but may even destroy our internal nationalism.

And out of this maze, neither the President, the State Department, nor any other Government agency offers a beacon light of concrete information to guide public opinion. President Wilson has clearly defined the attitude and aims of his Administration toward our Latin-American neighbors and backed them up with clear statements of facts as he sees them, thus giving the public something on which to base its judgment. Our international consciousness is groping for similar statements regarding our world policy. It would be well if the Administration should give out, in concrete form, a history of our recent diplomacy with European nations, laying out its attitude and aims for the future so that the American people can achieve an international consciousness with definite facts on which to base it.

If the American people, in the light of new situations and contingencies, ought to revise their already rendered decision on international affairs, it is the State Department or the President who should lay before them the facts on which to base a new decision, and not propagandists in the employ of a foreign government.

LAND FOR THE LANDLESS

UNDER this title the *Reclamation Record* describes the free lands that the Government still has to give away. The surprising total of more than 250 million acres is itemized in the article. Twenty-five states still contain homestead lands—Nevada the most, with 55 million acres, and Missouri the least, with 952

acres. The following states have a million acres or more, the list reading in descending scale from Nevada's high record: Utah, Wyoming, New Mexico, Arizona, Montana, Idaho, Oregon, Colorado, California, South Dakota, Washington.

The *Reclamation Record* itself is noteworthy. It is published by the Department of the Interior and is one of those rare Government publications that are interesting as well as informing. It is as much like a modern magazine in appearance as the antiquated typography of the Government Printing Office will let it be, but its text is an achievement, for it manages to put the touch of humanity and readableness upon information that is useful for farmers everywhere.

A YEAR OF GOLD—AND SERVICE

THE year now drawing to a close has been one of the most prosperous in the history of the United States. Some conception of the wealth in new values that it has brought us is given by the pictorial record of prices and production that appears elsewhere in this magazine.

But it were a sorry thing to think upon this record only as an addition to our people's wealth. Nor is that the only aspect of it. What has been done has been to keep alive, and to accelerate, the processes of peaceful industry in a world whose factories have for two years been given over chiefly to making the machinery of war. This is a genuine service to the world, and we may take the money it has brought us with an easy conscience, even with pride, for it has been more than well earned—our beef and grain and wool and cotton have done their share to feed and clothe the civil population of Europe, while our automobiles and implements have been used largely to carry on the normal activities of life in the warring countries. That is perhaps the chief satisfaction in our prosperity. Another lies in the widening of our own industrial life. Even in the development of means for making explosives that add to the destructiveness of war we are acquiring the means for chemical manufactures that will permanently enrich the peaceful work of the

Nation when the war will cease. The enormous works for the recovery of the products of the kelp beds off the coast of Southern California have been built not only with an eye to the acetone they now produce for gunpowder but with a long view ahead to the potash they will hereafter produce for restoring the fertility of American farms. The demand for trinitrotoluol has caused makers of coke to recover the valuable benzol which we have wasted for years in the form of smoke; but after the war benzol will be used less in explosives and chiefly in the making of dyes and drugs to brighten life and alleviate mankind's ills.

In the manufacture of glass, of porcelain, of earthenware, of special steels, and of many other products, Americans have not merely added to the resources of our industries but they have added new processes that will be of benefit to all nations.

Thus, more than a Year of Gold, it has been a Year of Service.

RAILROAD PRESIDENTS "UP FROM THE RANKS"

A LONG in the summer, when the conferences were being held in Washington between the railroad officials and the leaders of the railroad brotherhoods, the correspondent of the *New York Times* sent a significant item to his paper:

A big purring automobile swung around the west corner of Pennsylvania Avenue and Fourteenth Street to-day and swept on past a big Capital sightseeing 'bus.

"Hello, there, Fred," shouted a well-dressed man on the 'bus.

"How are you, John?" answered the prosperous man in the automobile.

"Fred" was Frederick D. Underwood, president of the Erie Railroad, who was out for a pleasure ride with some of the other representatives of the \$10,000,000,000 worth of railroads in the United States. "John" was one of the engineers on the Erie, with whom "Fred" used to work, and who now threatens to help tie up the Erie and all the other railroads of the country if "Fred" and his associates don't grant the brotherhoods the eight-hour day.

An interesting and profitable half-hour can be spent by taking a railroad guide book and "Who's Who in America" and

looking up the names and biographies of the heads of the railroads. These biographies are, necessarily, of the sketchiest sort; yet one does not have to overtax his imagination to read between these prosaic lines the unpenning struggles and the unsung victories that were entailed in rising from the crowded slough of mediocrity:

Mr. Charles H. Markham, president of the Illinois Central Railroad, began his railroad service as a section laborer on the Atchison, Topeka & Santa Fe.

Mr. George B. Harris, chairman of the board of the Chicago, Burlington & Quincy Railroad, started his life career as an office boy with the Hannibal & St. Joseph Railroad, now one of the subsidiaries of the C. B. & Q.

Mr. Edward T. Stotesbury, chairman of the board of the Philadelphia & Reading Railway, head of Drexel, Morgan & Co., of Philadelphia, member of the firm of J. P. Morgan & Co., of New York, and president or director of forty-odd corporations and railroads, started working as a clerk for the wholesale grocery firm of Rutter & Patterson, of Philadelphia.

Mr. Marvin Hughitt, chairman of the board of the Chicago & North Western Railway, started as a telegrapher.

Mr. Alfred H. Smith, president of the New York Central Railroad, was once a messenger boy in the service of the Lake Shore & Michigan Southern Railway, now a subsidiary of the Central. His predecessor, President William C. Brown, started his railroad career working with a section gang when he was sixteen.

Mr. Frank Trumbull, chairman of the board of the Chesapeake & Ohio Railway and of the Missouri, Kansas & Texas Railway, started as a clerk in the comptroller's office of the M. K. & T. when he was sixteen.

Mr. William H. Williams, chairman of the board of the Wabash Railway, was a clerk at sixteen with the Pennsylvania.

Messrs. Samuel Rea, president of the Pennsylvania Railroad, Howard Elliott, president of the New Haven, and Benjamin F. Bush, president of the Missouri Pacific Railroad and now its receiver—all rose to their present positions from the humble one of rodman.

And so on, down the list. These are all essentially self-made men; most of them were deprived of the advantages of a college education. They are inspiring evidence of our approach toward the realization of that national ideal known as Equality of Opportunity.

SOME CORRECTIONS

THE WORLD'S WORK is glad to publish the following letter from E. I. du Pont de Nemours & Company, of Wilmington, Del., both because it makes amends for an unintentional injustice to that company and because it illustrates again the confusion and hardship that inevitably accompany the militia system of national defense. The communication refers to the series of letters from the families of National Guardsmen published in the October issue of this magazine under the title, "The Folks They Left Behind Them:"

On page 692 of your October number appears a letter which does this company a great injustice.

The blanks are easily filled out. Any one can supply the name of the company, and we had no trouble in tracing the identity of the soldier whose name is left blank in the letter.

The statements made by the writer are true, so far as the failure of this man to receive his pay from this company is concerned, as of the date of the letter, which apparently was written in July. Its publication in October gives an entirely false impression.

The facts of the matter are: This company offered to pay all of its employees who entered the Army their full salaries minus the amount they received from the United States Government. This man left no data as to his position in the Army—whether he were private, non-commissioned officer, or officer, and the company's accounting department had difficulty in getting the data. As soon as this was secured, however, a check for his back pay, \$117.13, was sent to him in care of the Adjutant General's office at Harrisburg, Pa., to which office he had directed that it be sent; other money has been sent in the same way since.

The portrait of James J. Hill on the cover of the October issue is copyrighted by Pach Brothers, of New York, and the cartoon on page 186, entitled "The Trip of the Bushel," by Mr. S. H. Greeley, of St. Paul.

THE "IFS" AND "ANDS" OF FOREIGN WAR BONDS

A MAN living in one of the Southern States came to the WORLD'S WORK recently with a request for information that would help him determine the advisability of putting some money he had available for investment into foreign government securities. His interest in that form of investment had been aroused by a suggestion made by one of the editors of a well-known financial magazine in response to an inquiry about the "best" way to employ a fund of \$15,000 at the highest possible rate of income consistent with safety.

One part of the suggestion, this investor said, was that no class of stocks could be recommended to meet such requirements. All the "coppers, steels, and industrials" had been immediately eliminated because, although many of them might still have speculative possibilities, they were selling far above their average, and it seemed certain that "when the copper metal comes down from 27 cents to 15 cents, steel from \$57 to \$30, and industrial business from a war basis to a peace basis, prices must yield."

It would be possible, the suggestion ran, to select, from among such securities as the best of the preferred and common railroad shares, the thoroughly seasoned public utility stocks, the preferred industrials with the longest records of good earnings, and certain mill and bank stocks, issues that were, perhaps, not selling much above reasonable estimates of their intrinsic values. Yet, they, too, were higher than their average level of prices.

By this process of elimination, the specifications of the inquirer were left to be met by bond investments, as follow:

\$2,000 Anglo-French 5's, due 1920, yielding about 6.30 per cent.

\$5,000 Dominion of Canada 5's, due 1931, yielding 5.30 per cent.

\$4,000 United Kingdom 5 per cent. notes, due 1918, yielding 5.50 per cent.

\$3,000 American Foreign Securities 5's, due 1919, yielding 5.75 per cent.

\$1,000 City of Paris, France, 6's, due 1921, yielding 6.30 per cent.

The Southerner wanted to know what, in general, was the opinion of the WORLD'S WORK in respect to this caution against buying stocks at prevailing prices for permanent investment, but said he desired more particularly to have pointed out some of the essentials entering into a determination of the status of the various foreign bonds and notes.

To begin with, he was told that the caution was based upon unquestionably logical investment reasoning. There is, in fact, great need to emphasize this point, for it is doubtful if there has ever been a time when the tendency of stock prices generally to soar above intrinsic values was stronger than it has been these last few months; or when the investing public as a whole was more prone to allow its judgment to be influenced by the spectacular happenings of the market-place.

Artificial valuations have, indeed, not been confined alone to stocks of the essentially speculative class, where popularity has been based for the most part upon guesses and rumors of future possibilities. They have been quite as much in evidence among stocks of established investment merit, even if to less significant proportions. Any careful investor would find it possible to discover this fact for himself by following the simple rule of investigating price movements over a period of years, while recalling that there is obviously a big element of the temporary in the exceptional enterprise that has lately been shared by practically every one of this country's great industries and businesses to which the investing public has contributed capital.

But to refer more in detail to some of the points called to this investor's attention as essential to an understanding of the

distinguishing characteristics of the securities of foreign nations and municipalities: These securities are of two general classes, namely, those representing external loans, repayable, principal and interest, in United States gold coin; and those representing internal loans, repayable, principal and interest, in the coin of the realm of the issuing country. ✓

As far as foreign securities are alone concerned, it is significant that the list suggested as the "best investment" for the "highest possible income consistent with practical safety" is made up exclusively of issues representing *external* loans. The reason for this is that such loans, by common consent and established precedent in international finance, are the prior obligations of borrowing governments.

Each of these two general classes of loans in turn subdivides into those resting wholly upon the faith and credit of the borrowing government, and those having specific security pledged for their payment. Previous to the great international financial upheaval caused by the war, it had been customary, in cases where expediency demanded the provision of definite security, for governments to set aside for that purpose special sources of income—for example, the income from the tobacco monopoly pledged by Japan under its $4\frac{1}{2}$ per cent. bonds of 1925. But both Great Britain and France, in meeting their vast obligations on account of war expenditures in this country, have more recently created an extraordinary type of secured government loans by pledging for the payment of certain issues of their notes a variety of high-grade bonds and stocks, purchased or borrowed from the private investment holdings of their citizens. And it is again significant that these two issues of notes, the United Kingdom 5's of 1918 and the American Foreign Securities 5's of 1919, secured by collateral largely in the shape of American corporation securities of the highest quality, comprise nearly one half of the total of the suggested "best investment."

Is it, then, to be inferred that, surrounding the securities representing the internal loans of the European governments that are finding their way in increasing amounts

into the American market, there are conditions which forbid their employment for purposes of *simon-pure* investment? The answer to this question may be suggested merely by pointing to the impossibility of estimating the limit to which the belligerent countries will find it necessary to go in the issuance of internal loans, by means of which they must, of course, continue to meet the burden of their financial requirements.

Nor is it necessary to go to the length of questioning the ultimate ability of these borrowers to pay their prodigious debts in full. There is enough uncertainty about how long the strain upon their resources is likely to continue to manifest itself in lower values for their money as measured by the American dollar, and to make the true income investor pause. How this uncertainty appears as an element of speculative chance in the internal European loans may be illustrated by taking the 5 per cent. National Loan of the Republic of France as typical.

The "rentes," or bonds representing this loan, are payable in francs, of which at the normal rate of exchange it takes 5.18 $\frac{1}{2}$ to make the equivalent of a dollar. Subscriptions for the bonds in this country are received, however, at the rate of 5.90 francs to the dollar, or at a discount of 14 per cent. This means that at the subscription price of 87 $\frac{1}{2}$, a bond of, say 5,000 francs denomination, costs \$741.53. Now, if the franc should regain its normal value and the bond were then sold at the subscription price, it would bring the equivalent of \$844.39, representing a profit of \$102.86, or about 13.87 per cent. And if the market price of the bonds should advance to par along with the return of the franc to normal value, the holder of 5,000 francs capital could sell for the equivalent of \$965, securing a profit of \$223.50, or about 30 per cent.

Such are the "ifs" and "ands" that make it apparent why the internal war loan bond has come to be regarded rather more in the light of what might be called a safe-guarded medium for speculating in foreign exchange than as an altogether satisfactory security for the more conservatively inclined American investor.

THE LIFE OF James J. Hill

Written with his approval and from exclusive access to his personal papers by his friend,

JOSEPH GILPIN PYLE

"How the eyes of the Dutch Committee would have bulged if they could have seen the prospective purchaser's estimate of what he was going to get! . . . It is little wonder that, with these facts at his fingers' ends, Mr. Hill was dominated by the sense of unparalleled opportunity."

III. MR. HILL CAPTURES THE ST. PAUL & PACIFIC RAILROAD

HIS DRAMATIC ENTRANCE INTO THE RAILROAD BUSINESS BY THE PURCHASE OF THE BONDS OF A HAPHAZARD GROUP OF LINES IN MINNESOTA WHICH "BEGAN NOWHERE AND ENDED NOWHERE" BUT WHICH HE LATER TRANSFORMED INTO THE WONDERFUL GREAT NORTHERN SYSTEM—THE FOUR ASSOCIATES, THE DUTCH COMMITTEE, AND SOME SHREWD FINANCE

THE event which came to open to James J. Hill a new and great career, to evoke his latent possibilities, and to change the aspect and fortunes of the Northwest was the panic of 1873. That made the opportunity for which he waited and of which he dreamed. Severe everywhere, it broke in full fury upon the railroad enterprises of this new country; financially ill-supported, built on rainbows of unlimited credit and profits to accrue from business still in the womb of the future, handled in some cases by men who cared less for the fortunes of the country than for their own personal aggrandizement. It needed but the first turbulent breath of the coming storm to bring this flimsy scaffolding, without even an uncompleted building to steady it, to the ground with a crash. When this opportunity moment came, it found also the man ready, equipped and waiting to wrest from it a talisman with which to touch the prairie and the iron rail and transmute them into wealth and fame.

For years Mr. Hill had largely controlled the profitable traffic from St. Paul to the

Red River Valley and Manitoba. But also for years he had realized that the ox-trains and river boats that carried it must give way to railroads. Pondering this inevitable conclusion, his active mind evolved at length a solution as daring as it was brilliant. His agency for the transfer of freight between river and railroad at St. Paul suggested the means. If the railroads were to become the masters over river transportation, he would become the master of the railroads.

Naturally his mind turned at once to the St. Paul & Pacific. This railroad, which threatened his territory, became henceforth the object of his most profound study. Own it he would; the only questions were, When? and How?

An intimate associate testified years later: "It [the project of securing the St. Paul & Pacific] became from day to day an all-absorbing subject with him. I used to tell him that he was getting it on the brain. He thought of nothing else."

Another intimate friend, Mr. Hill's next-door neighbor for years, Mr. H. P. Upham, afterward president of the First National

Bank of St. Paul, tells of the origin of the plan in these dramatic words—a personal touch which those who knew Mr. Hill would recognize instantly as carrying conviction: "From the time he first conceived it, he was possessed by the railroad scheme. He used to talk it at all times. He sat in the old club house holding Kittson in a corner and boring the plan into him with a threatening forefinger. He ate and drank and slept with it."

The St. Paul & Pacific was the heir-at-law to the land grants, franchises, and privileges of an earlier company, the Minnesota & Pacific, that had been chartered to give to the territory of Minnesota a line of railroad across the territory east and west (from Stillwater, by way of St. Paul and St. Anthony, to Breckenridge), and another line north and south, from St. Anthony (Minneapolis) by way of St. Cloud and Brainerd to St. Vincent, on the Canadian border. Later grants extended the St. Paul & Pacific (on paper) from St. Paul to Winona and from St. Cloud to the head of Lake Superior. Altogether, the company held the right to construct 770 miles of railroad and to receive a total land grant of 5,184,000 acres.

The proposed railroad line to the Canadian border at St. Vincent was, to Mr. Hill's mind, a most valuable asset. When completed it would traverse the Red River Valley and Manitoba, and would supersede his boats on the Red River.

But the Northern Pacific also was greatly interested in getting a line down the Red River Valley, to handle the Manitoba freights, and in getting a line into St. Paul and terminal facilities there. The St. Paul & Pacific covered both grounds either in fact or in right. The Northern Pacific undertook to secure its aims by the simple expedient of swallowing its rival—that is, it bought the stock of the St. Paul & Pacific. But it had to go further than this, for the financing of the latter road was a fearful and wonderful thing, the like of which has rarely been seen in railroad history. The cream of the St. Paul & Pacific had been put into another company, organized in 1865, and called the "First Division of the St. Paul & Pacific." It was formed by the holders of certain special and



THE ST. PAUL & PACIFIC PROPERTIES

Acquired by James J. Hill and his associates in 1878. "Until Mr. Hill and his friends came into control, the property was a pitiful heap of unrelated scraps. Only two lines, namely, those from St. Paul to Sauk Rapids and to Breckenridge, were finished. The other and more ambitious lines, on which hung a big land grant, were patches of road-bed hung up in the air. In 1871 there remained still to be completed 435 miles of the original system"

preferred stocks, and contracted with E. B. Litchfield, of Brooklyn, N. Y., to take over and finish the lines from St. Anthony to Sauk Rapids and from St. Paul to Breckenridge, with the land grant belonging to them. Hence, in 1870, the Northern Pacific bought also the capital stock of the First Division Company. It now had an absolute monopoly of the railroad situation in the Northwest. It owned both the companies by which every railroad enterprise in that section was controlled.

With a calculating eye Mr. Hill had watched the bond issues of the St. Paul & Pacific pile skyward during the ten years before the panic.

It had not neglected any opportunities of this sort. The branch line began in a modest sort of way with three smaller mortgages issued at different times. Tien, getting a little into the stride, it put out \$2,600,000 of new and refunding bonds in 1865. But the year previous the main line had made one issue of \$1,500,000

and another of \$3,000,000. In 1868 there was a crop of \$6,000,000. Then came the great stroke of business which fairly dazzled even the operators of that time. This was the contract made by one of these companies with the other, already referred to (that is, a contract of some people with themselves), by which the First Division was to finish the unfinished lines, equip them, take them under lease, and get the land grant; against all of which privileges, or obligations, according to the angle of vision, it proceeded to issue, in 1871, a trifle of \$15,000,000 of bonds.

This was a huge total, considering the nature of the security behind it. American investors would not have touched it. The bonds were disposed of through a firm of bankers in Amsterdam, with one of the Litchfields active in the big deal that placed these \$15,000,000 of securities with the investors of Holland. Enough of the purchase price was held back to pay interest on the issue for five years, in order that the holders might be sure of returns, even if paid out of their own principal, and that the prosecution of the railroad work might remain uninterrupted by financial squalls. When this and the commission charged for negotiating the loan had both been deducted, less than fifty per cent. of the cash paid in was left to apply to actual construction. There were many hands between the thrifty Dutchmen and the Minnesota prairie; and ultimately the bonds netted to their owners less than forty dollars on the thousand of face value. These bonds, defaulted and dishonored, became seven years later the basis of the purchase of the property by Mr. Hill and his friends.

RAILWAY ODDS AND ENDS IN MINNESOTA

Out of the proceeds of these various transactions there had been built some fragments of road, cheaply constructed and utterly incoherent as a railroad system. Mr. Hill knew them like a book: in his travels over the prairies he had watched their haphazard and futile growth. The property possessed by the St. Paul & Pacific and the First Division companies together included, at the time when they were finally submerged, a choice assortment of railway odds and ends. To the

First Division, as the concern organized to tempt the foreign investor, had been assigned the lion's share. It had a line from St. Paul by way of St. Anthony (Minneapolis) to Sauk Rapids, and another from St. Anthony to Breckenridge. The parent company, the St. Paul & Pacific, rejoiced in a line running from Sauk Rapids to Brainerd, graded but not ironed, and a theoretical line from East St. Cloud (near Sauk Rapids) northwest to Glyndon, where it crossed the tracks of the Northern Pacific, and thence was supposed to run north down the valley of the Red River to St. Vincent or Pembina on the international boundary.

As a matter of fact, at the time of the general collapse in 1873, and thereafter until Mr. Hill and his friends came into control, the property was a pitiful heap of unrelated scraps. Only the first two lines mentioned, namely those from St. Paul to Sauk Rapids and to Breckenridge, were finished. They were operated, in a slipshod way, so far as the trifling local business seemed to warrant. The other and more ambitious lines, on which hung a big land grant, were patches of road-bed hung up in the air. A few miles of iron had been laid on the Brainerd branch; from St. Cloud to Melrose; and on the stretch north and south from Glyndon. Considerable grading had been done elsewhere. In 1871 there remained still to be completed 435 miles of the original system.

BUILDING RAILROADS WITH SCRAP IRON

The condition of the property was dispiriting enough to the representatives whom the Dutch bondholders sent to look it over. The stretch of track from Glyndon north and south began nowhere and ended nowhere. Mr. J. P. Farley, receiver of the St. Paul & Pacific, stated in 1873, when he took charge, that you could get over it with a hand car, but that a locomotive or train could not be run over it at all. Later he reported as follows on the operation of this piece of line: "In December, 1873, and January, 1874, we ran a few trains over the Red River portion of our road. We found the traffic so extremely light that we could not make operating expenses, and we abandoned the operation of the line till the fol-

lowing May, from which time we continued the operation of the road until November of the same year, closing the season's business with a light profit above the actual expenses."

But clearly a property which could at least earn its bread and butter in one direction, and which could give connections with St. Paul and the Mississippi River in the other, would be worth holding on to if it could be done without too much expenditure of ready cash, which was scarce in those days.

The Northern Pacific, which had still a couple of years' lease of life, was not ignorant of the situation nor desirous of relinquishing the control that it had secured. Had not financial disaster intervened, nothing would have induced it to surrender virtual possession of an adjunct so valuable, and a potential competitor that the future must make so troublesome, as the St. Paul & Pacific. Bankrupt itself, the Northern Pacific not only could not come to the relief of the bankrupt St. Paul & Pacific, but it could not fulfil the terms stipulated on its purchase of the First Division Company. That stock was turned back to Mr. Litchfield, to reappear later. The St. Paul & Pacific defaulted on its bonds, and the subsequent foreclosure sale extinguished the rights of the stock on which the Northern Pacific had relied.

Meantime there were all kinds of friction. The Northern Pacific threatened to control the Red River business from Glyndon north to the international boundary line, or to destroy it. It threatened to parallel the line of the St. Paul & Pacific by building one on the other side of the Red River, and to do the same for the line from Sauk Rapids to Minneapolis and St. Paul. It worked to get different portions of the land grants belonging to the St. Paul & Pacific set aside. It claimed part of them for itself, and instituted litigation that dragged on interminably. Each one of its aggressive acts was a body blow to the infirm old enterprises grouped under the general name of the St. Paul & Pacific. They made any attempt to rehabilitate that concern seem hopeless.

It is now possible to trace with understanding the lines of what Mr. Hill himself

forty years later called "the great adventure" of his life as they took shape and grew in his brain into intelligence, purpose, and power.

PLANNING "THE GREAT ADVENTURE"

The first step, of course, for Mr. Hill, from the moment that his thought, taking form and substance, sought to find realization in action, was to secure the coöperation of men able to help.

The first of these men was his partner, Norman W. Kittson. This railroad scheme seemed wild to him; but at last he was won over, if not convinced. Mr. Hill "bored away," and the deadly forefinger got in its work. Kittson decided that he, too, would take the plunge. But in his heart he was not over-sanguine about it. General Sibley, who was at that time perhaps the most prominent and influential man in the state, of which he had been the first governor, and who was intimately acquainted with Kittson, said afterward: "He did not say a word to me about his contemplated participation in the purchase of the railroad bonds, and I only learned of it after the deal had been consummated. He said one day that the reason why he did not tell me of the plan was because he knew I would endeavor to dissuade him from it. 'You may not know, Sibley,' he said, 'that everything I had in the world was risked on that; an enormous risk at my time of life, and I did not dare to tell you of it.'"

The second man to become interested in the idea, Donald A. Smith (who later became Lord Strathcona), was already quite a personage, having held the office of Chief Commissioner for the Hudson's Bay Company. Since 1869 he had been familiar with the country. Since 1870 he had known and appreciated Mr. Hill. And he had his eyes fixed on the other side of the shield: the possibility of development not on the American, but on the Canadian, side of the border, where his interests were. The Canadian Pacific idea was in the air, and until it materialized it would be imperatively necessary for the people of Winnipeg and the people of the territory about and beyond it, already beginning to be settled, to get direct rail connection with

the outside world. There was but one way: Canada must build a line from Winnipeg to the border, and connect there with some line built through the United States to St. Paul.

Late in 1874 he was passing through St. Paul, and availed himself of the opportunity to talk with Mr. Hill and Mr. Kittson. Of them he made a request for information about the property, land grant, equipment, and debt of the companies which, for convenience, may still be designated by the single name, "St. Paul & Pacific." That information Mr. Hill had been collecting everywhere.

At first, however, Mr. Smith was not a convert to the plan to purchase, which, to him, seemed illusory. He wanted to find out who were the owners of the bonds of the railroads, and to see if these parties could be persuaded to put enough more money into them to give Winnipeg its rail connection. He learned that there was no hope of that.

THE SALE OF THE NORTHERN PACIFIC

Thus baffled in his first idea, Mr. Smith had progressed far enough in 1874 to reach the following opinion, stated in his own words: "Failing to get the road through in any other way, I should have been glad to induce others along with myself to take it up, if it could be got upon such terms as *these gentlemen thought it could be obtained*. The stock was looked upon as valueless, and that there would be no great difficulty in acquiring it; then it was to get the bonds—a majority or controlling interest in the bonds—on the best terms on which they could be got, which I believed would be at a very low price."

In August, 1875, the entire Northern Pacific system was sold at foreclosure and reorganized by a committee of the bondholders. It was to be expected that, from this time, it would interpose an opposition more effective than it had been able to make during the last few years of helplessness. Part of the St. Paul & Pacific system was now in a position to become self-sustaining by virtue of the Manitoba business that it carried, from which Mr. Hill's boats were taking their toll. For its ninety-seven miles of track in the Red River Valley it

reported net earnings of more than \$8,000 for the first eleven months of 1875. The receiver, in congratulating himself upon this showing, says: "We expect to control over our own line the entire traffic of Manitoba by running in connection with a daily line of boats terminating at Fisher's Landing." This was Mr. Hill's idea, and he had foreseen something of the sort from the moment when he personally went into the Red River business.

It was in the year 1876 that Mr. Hill's plan for getting control of the St. Paul & Pacific properties began to appear at the same time urgent and practicable. The panic of 1873 was now in the background, confidence was partially restored, capital was ready for new ventures, and the fictions about the unpromising character of the Northwest as an agricultural region were pretty well dissipated. Something was going to be done; the practical question was: Who would get the opportunity?

When the court had appointed a receiver for the St. Paul & Pacific in 1873, it had authorized the sale of \$5,000,000 of debentures to secure the completion of the branch to St. Vincent by December 2d of that year, to save the land grant. Neither the directors of the road nor the Dutch bondholders were able or disposed to furnish the money. The receiver actually got \$100,000 to spend.

THE "DUTCH COMMITTEE"

The bondholders, including the partners of the Amsterdam banking house through which they had dealt, organized a committee of their own members to act for them which will appear throughout this time and until the conclusion of all negotiations as the "Dutch Committee." They selected the firm of John S. Kennedy & Co., of New York, to represent their interests in the United States, and afterward gave Mr. Kennedy power of attorney to act for them. In 1873, Mr. John Carp, one of the members of this committee, came to the United States for the bondholders, visited St. Paul, spent some weeks there, and went over the property. Obtuse as he was, he saw its possibilities. But neither he nor any one else could devise a scheme for realizing these without more investment. As the

bondholders resolutely refused to part with more cash, and could hardly be persuaded even to surrender coupons from their delinquent securities, these efforts were necessarily fruitless.

On March 6, 1876, an important act was passed making it possible to foreclose a mortgage on a land-grant railroad without thereby destroying the immunity from taxation of its granted land. Up to this time it had been practically impossible to organize a new company to take over the old properties without forfeiting those lands by the very act. Now such a proceeding was specifically authorized by law. It was, indeed, time to get busy.

A ROUND-UP OF FACTS, HILL FASHION

There was not an atom of available fact bearing on the proposed transaction which Mr. Hill had not mastered. Here are the words in which he himself summed up his activity during this interval: "I commenced to get all the information that I could find, copies of the mortgages, of the complaints and paper books published in connection with the lawsuits, records in the court, and such information as I could gather from parties who were likely to have information as to the situation in Holland, as to the situation with the bondholders and their relations to the Dutch Committee, the position of the several lawsuits, the grounds, so far as I could learn, upon which the lawsuits were brought, and with counsel discussed the merits or probable merits of those cases." Donald A. Smith said that the two of them met frequently in 1874 and 1875; that "we repeatedly talked the matter over, and he appeared to have a perfect knowledge of the whole thing."

Now the critical moment had come. Mr. Hill had some business at this time to transact with the Canadian Government, in relation to the carriage of rails to Manitoba for its new line; and he left St. Paul for Ottawa March 17, 1876, having prepared first to see Mr. Smith and arrive at something definite if possible. Mr. Smith believed that he could interest some of his friends in London in the enterprise. He and Mr. Hill breakfasted together "in a little cottage back of Ottawa," and Mr. Smith finally told Mr. Hill to go back

home and see at what price the Dutch bondholders would dispose of their holdings. The "Bank Cottage" interview separates definitely the time of planning from the time of action. Meeting in Chicago, on his way home, with one of the friends to whom he had for years talked of his scheme Mr. Hill burst out, the moment he saw him, with "Donald A. Smith is ready to take hold." He had already ceased to handle steamboat business outside of his own, and in June he gave up his arrangement for handling freight in St. Paul. Bigger things were now in prospect. For him, the waiting time was over.

Three men were now ready to take up the plan and to chance their future upon it. But that was not enough. A fourth associate must be secured who had money or the confidence of men of means. Mr. Hill knew, and the others had taught themselves to believe, that they had to seek for credit as well as for cash. If they could handle the purchase, he was convinced that a line of credit which should enable them to finance the new concern at the start would be enough to put it on its feet and enable it to finance itself. Where was the person through whom this credit or cash or both could be procured? The man to whom they turned was Mr. George Stephen, afterward as well known in the British Empire under the title of Lord Mount Stephen as Mr. Smith was under the title of Lord Strathcona.

ENTER, GEORGE STEPHEN

In 1871 Mr. Stephen was elected a director of the Bank of Montreal, of which he became president in 1876. At this time, therefore, his mere counsel on such a project as these gentlemen had in mind was of no inconsiderable assistance. But it was a long time after the plan was moving toward form and fruit before Mr. Stephen came formally into the arrangement. Mr. Hill himself did not meet the latter until 1877. In May of that year, Mr. Smith wrote asking Mr. Hill to meet him in Montreal. There Mr. Hill was introduced to Mr. Stephen. He had had no knowledge of the latter's connection with the Bank of Montreal nor any idea that he would personally come into the railroad project.

suggestion was that Mr. Stephen was out to go abroad, and that he might be interested some of his powerful friends in England. He thought that they might be willing to advance money on the security of the bonds still to be bought from the Dutch holders. In September of the same year, 1877, Mr. Stephen was called to Chicago by business for the Bank of Montreal, of which he was then president. Together with Mr. Smith and Mr. R. B. Angus, the general manager of the Bank of Montreal, he ran up to St. Paul, and Mr. Hill took them on a trip over the railroad which was becoming so interesting to them.

In the same year and month he and Mr. Hill, Mr. Smith, and Mr. Kittson had a meeting at Montreal at which was present Mr. John S. Barnes, of the firm of John S. Kennedy & Co., New York City, representatives of the Dutch bondholders. At this meeting the prices to be offered for the bonds were practically agreed upon; and it was also understood, though nothing was yet put in writing, that each of the four principals interested in the negotiations now going forward would have a one-fourth interest in the profits to be realized, while the remaining one-fifth could be used by Mr. Stephen, at his discretion, in securing the capital necessary to the enterprise, wherever that might be found.

A STRATEGIC "OFFER"

Mr. John Carp had come over from Utrecht again, in December, 1876, to see what might be done for the desperately poor bondholders. He had a complicated scheme of his own for the reorganization of the property. He invited propositions from Mr. Hill and Mr. Smith. A letter was sent to Mr. Carp, January 29, 1877, making an offer to take over a part of the properties, those of the First Division, on terms of whose acceptance there could be no expectation; whose conditions it would be far more difficult for the seller than the buyer to meet. It was never even submitted to the Dutch Committee. Nobody had expected that it would be. It was made, by Mr. Hill's advice, merely to humor Mr. Carp; to prevent him from becoming hostile, and to prepare the way for future negotiations on a different basis

when the time should be ripe. Incidentally it was made a medium through which might be conveyed to the bondholders some unpleasant information about their properties. The writers "knocked" some of the line pretty hard, but no one can say they misrepresented facts. So its terms were of no practical importance.

The only important result of this tentative offer was to obtain, in return—which was one of its objects—an idea from Mr. Carp of the prices at which and the terms on which, instead of those offered by Mr. Hill, he thought the Dutch Committee might feel willing to part with their holdings. This was precisely the information that Mr. Hill had been fishing for in these shallow waters. Taken with all the other advices gathered in, there was now something to go upon. Mr. Smith had at last succeeded in convincing his friend, Mr. Stephen, that the thing deserved looking into. Now, in May, 1877, Mr. Hill went to Montreal on Mr. Smith's request, as already stated, and for the first time met Mr. Stephen. At this conference all details of the project were discussed quite thoroughly. Several days were spent in maturing a plan to buy the bonds held by the Dutch Committee. They proposed to bid a lump sum and let the owners of the different classes of bonds settle among themselves how it should be divided; that is, what should be the discount on the several classes of bonds to be put into the deal. With this understanding the Montreal conference broke up and Mr. Hill came back to St. Paul to take immediate steps for carrying out the programme thus settled upon between the three active associates who had drawn it up.

SOUNDING THE DUTCH COMMITTEE

Accordingly a proposition was made by Mr. Hill and Mr. Kittson, May 26, 1877. In the letter of January 29, 1877, Hill and Kittson, acting alone, had offered \$3,500,000 in cash and agreed to surrender the unsold portions of the land grant. But they asked, in return, "delivery to us of a perfect title, vesting in us, under such corporate name as we may adopt, said railroad and its franchises, and all other property clear of incumbrance." This

for a part of the property only! It was a condition clearly impossible of fulfilment for the present, if at all, by the owners of the property. The offer was a mere "feeler." The next proposal, that of May 26th, in the same year, from the same gentlemen, contained a valuation of the different classes of bonds outstanding, ranging from 80 cents to 11 cents on the dollar. It advises the bondholders that Messrs. Smith and Stephen are to furnish the money, and it asks for notice of sixty or ninety days, in case the proposal is favorably received, in which to obtain the necessary funds. On request of the Dutch Committee, the proposition was extended until September 10th. Mr. Carp was trying to get better terms than those that had been named. On December 27, 1915, Mr. Hill, reviewing this transaction, summed it up thus in conversation: "I remember when Stephen went to England to try to raise funds. He was sanguine, and said to go ahead and make an offer for the property. But I feared a miscarriage. When Mr. Kittson and I made the offer to the Dutch bondholders, I worked all night over the form of the proposition to be made, and took it to Judge Young in the morning to see that the phraseology was all right. . . . It was construed by them as an offer for the property outright; but it was, in reality, only an option under which we secured a certain time to raise the money, and were not bound if we did not succeed."

SOME THINGS J. J. H. OBSERVED

Two statements still exist in the handwriting of Mr. Hill, one describing the lines and their property, under date of September 1, 1877, and the other listing the bonded indebtedness, which show that he was in possession of even completer details of the business than were the owners themselves. He lists 455½ miles of completed track, ten miles from Crookston to Fisher's Landing, and 34 miles under construction from Breckenridge to the end of the track south of Glyndon, for which the bondholders had at last been persuaded to furnish some money and which was opened for traffic October 22, 1877. There are 229½ other miles on which the grading is mostly done, but nothing else. He catalogues all the

rolling-stock, with current valuation, and the real estate. He shows the net earnings of the First Division Company to have been \$264,142, which was about \$6,000 less than they were six years before. But he also notes that during the fiscal year 1877 there had been expended on additions and improvements to the property \$188,290 *which had been charged to operating expenses instead of to construction and equipment.* That detail, which attracted little notice when railroad accounting was such a mass of jugglery with figures that nobody paid much attention to any item of it, had vast significance for his practical mind. It showed net earnings, on a fair operating basis, of \$450,000 a year; a more than respectable total.

THE PURCHASE PRICE

The rest of the inventory is even more interesting. Mr. Hill lists every fraction of the debt, describes the securities and values them as if he had been dealing with them all his life. He shows that the cost of the bonds at prices set in his proposal would be \$4,330,180. To this he adds costs of foreclosure and of completing uncompleted portions of the line, and arrives at the figure of \$5,540,180 as the "total amount required to buy the property as it now stands and complete the system as far as at present desirable."

But the list of assets is different. How the eyes of the Dutch Committee would have bulged if they could have seen the prospective purchaser's estimate of what he was going to get! So fixed, however, was their own unbelief that it would only have convinced them that he was an impractical dreamer. Every detail is there; and every item is valued by a man who knew personally its quality and quantity, and who was never accused of getting the bad end of a bargain or of overvaluing what he was trying to purchase. Putting the moderate figure, absurd in the eyes of to-day, of \$20,000 a mile on the track of the 570 miles that would exist after work under way had been finished, and the expense of completing which he had figured into his cost prices, and adding the actual value, with depreciation, of equipment, shops, supplies, etc., the bare railroad prop-

erty stands at \$12,216,718. Townsites and land grants, the latter estimated only at the current figure of \$2.50 per acre, the price then put on public lands in general, footed up \$6,586,205 more. Here is a total property value of a little less than 20 million dollars, to be had at a little more than twenty-five cents on the dollar. And this is a flat bargain, allowing not a penny for the certain increase of business and rise of values with the development of the country. In a supplementary note, so as not to mar the severe austerity of the estimate itself, Mr. Hill says: "We believe that \$600,000 per year would be a low estimate, and with fair average crops the net earnings would undoubtedly reach \$700,000; which amount will increase from year to year as the country is settled up." It is little wonder that, with these facts at his fingers' ends, Mr. Hill was dominated by the sense of unparalleled opportunity.

After a lot of dickering over prices during the latter part of 1877, a schedule at which the various classes of bonds might be bought in was accepted by Mr. Hill and Mr. Kittson and by the Dutch Committee. As was stated above, the former had so worded their offer as to make it cover only an option to purchase, and began with redoubled energy to try to raise the cash. The latter understood that they had made a sale, and made public announcement to that effect.

NO HELP FROM ENGLAND

But in December of that year Mr. Stephen came back from England to report a flat failure. This was a terrible setback for the Dutch Committee, who had foreseen an end to the troublous responsibilities of their stewardship; and to the bondholders of all degrees, who had been counting on a little cash in exchange for their depreciated paper. They became desperate for a trade; for any kind of trade that would put an end to their worries, their negotiations, their apprehensions, their responsibilities.

On Mr. Stephen's return from abroad, Christmas Day or the day afterward, 1877, the four disappointed associates had a meeting at Montreal. Every road but one had been closed to them. They could

not get cash. It remained only to be seen whether a proposition to buy these bonds by pledging their credit would be considered. At this meeting they drew up another proposition. The prices of the bonds as already agreed upon were to stand. But an effort was to be made to get the securities by putting up only such amount of cash as these gentlemen could raise themselves; and providing for payment of the balance only after the foreclosures should have been completed and the property thus put in shape for a future issue of credit against it. With this understanding they all went to New York about January 2, 1878, to negotiate anew with Kennedy & Co. Here, in the evening, Mr. Hill personally drew up the memorandum which was the basis of the discussions that ended in the transfer of the property.

THE TERMS OF THE DEAL

He proved himself as shrewd here as in his inventory of the property itself. This memorandum, of two printed pages in length, is the patent of nobility for the whole Great Northern system of to-day. It proposed that the bonds should be turned over at the prices already agreed upon. Then it agreed to pay to the bondholders interest on the purchase money at 7 per cent. until the various mortgages could be foreclosed and clear title obtained. Within six months after that, the whole purchase price was to be paid in 6 per cent. gold bonds of the new company, together with \$250 of 6 per cent. preferred stock for each \$1,000 of such bonds. The purchasers were to obtain and advance the money necessary for the extensions of the system urgently demanded to save forfeiture of land grants. Until all was completed, the bonds were to be put in escrow; but the purchasers were to get immediate possession and management of the foreclosure proceedings, and through these of the property. That was the substance of the new, and, as it was to be, the successful offer to the Dutch bondholders, which was formally made January 5, 1878.

At last the associates saw a way to get control of these railroad properties and put their plan to the test. Only—and they were fully aware of it—a failure, judgment

not vindicated by the event, any mischance that could not be foreseen and guarded against, would leave all of them ruined in fortune, broken in hope, discredited before the world, and stamped as adventurers or worse. This was the supreme test. Blithely they welcomed it and put in pawn their entire worldly possessions and their business honor.

During all these years these four men had been working together with the most absolute faith in one another, but without the stroke of a pen to prevent any undue advantage being taken by one of them, or to show what each might expect to receive in case of success. The matter had, indeed, come up indirectly during the conference before Mr. Stephen left for England on his unsuccessful mission. It was agreed that no capitalist could be expected to come forward with the desired support unless it were made to his advantage by assuring him a share in the profits of the project under consideration.

Now that no partner had appeared, and it seemed probable that their last offer, which they could make good, might be accepted, a formal agreement was required. So it was agreed in writing by the four associates that all the profits and losses to accrue from the possession and operation of the railroad companies, when bought, were to be divided in the proportion of two fifths for Mr. Stephen and one fifth for each of the others. It was so that the matter was settled, and some hundreds of millions of future values were allotted to these sanguine and desperately daring men.

The sale was a good thing for the bondholders, because they obtained prices above reasonable expectation. It was frequently said, during the years following the sale and reorganization of the property, that the bondholders had been unjustly dealt with; that the purchasers had hoodwinked them and obtained from them a valuable property for a song. The same story has been repeated in later years. It was purely the invention of envy and disappointment on the part of those

who did not recognize the opportunity until it had passed beyond their reach. Only a few believed in the future of the property. Nobody believed in the future of the bonds.

The various classes of discredited bonds were of different intrinsic value, according to the dates and amounts of the different issues and the amount and quality of the property by which they were secured. Some were bought at 75 per cent. of par, some at 28, some at 35, some at 30, and \$11,400,000 of that extraordinary \$15,000,000 issue at 13 $\frac{3}{4}$. The bids for these bonds on the New York Stock Exchange, September 28, 1877, three months before the offer of the associates was prepared, ranged from 45 $\frac{1}{2}$ for those for which they offered to pay 75, to 6 $\frac{3}{4}$ for those they took at 13 $\frac{3}{4}$. Clearly a very handsome advance, even when payment was to be made in new securities. For six years, from the time when construction stopped in 1872 to the purchase in 1878, the property lay there for any man to see and estimate. Mr. Hill had talked freely, as has been seen, of his plan to get control of it if he could. Any man who believed in the country, no matter whether he believed in Mr. Hill or not, could have foreseen that these securities must have value; should have bought bonds instead of selling. It was a common-sense business transaction in the open market, precisely as such securities are bought to-day by persons contemplating the acquisition of control or of a heavy interest in some property, and sold by those who are sorry for it afterward. The ghost of that "unfair bargain" story ought never to walk again.

[In the WORLD'S WORK for January, Mr. Pyle will tell how Mr. Hill reorganized the St. Paul & Pacific properties and developed the Great Northern Railroad system. This article will reveal Mr. Hill's unusual theories of railroad management working out in practice into principles of business that have since been universally accepted.]

AMERICA'S GOLDEN YEAR

SOME OF THE MORE PROMINENT INDUSTRIES THAT HAVE
HELPED TO FILL THE HORN OF PLENTY FOR THE
UNITED STATES—NEW PRICES FOR COM-
MODITIES WHICH HAVE BROKEN
ALL PREVIOUS RECORDS



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RAILROADS

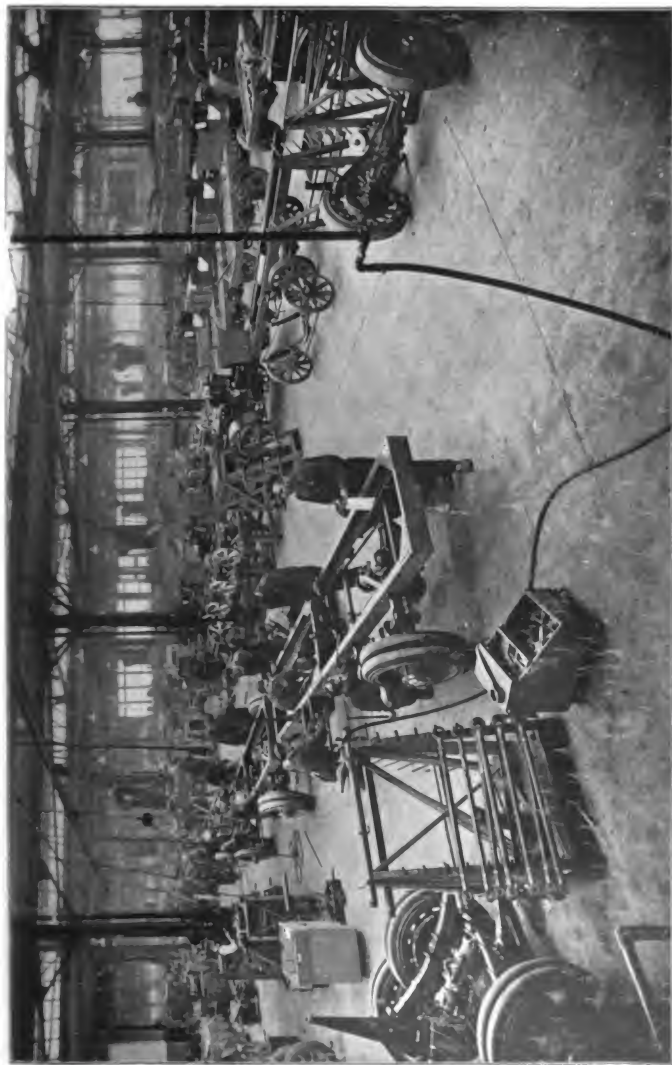
The gross earnings of the steam railroads of the United States in ten months of 1916 increased \$515,042,186 over a like period for the year previous



SHIPPING

For the first time in history the shipbuilding industry of the United States in 1916 virtually equalled that of England supported by Japan, Italy, and Germany.

Over 100 steel vessels with a total of 1,454,225 tons were built or being constructed.



AUTOMOBILES

Exports of automobiles leaped from \$33,000,000 in the year ending June 30, 1914, to \$120,000,000 in the year ending June 30, 1916



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STEEL

The value of the total exports of iron and steel and manufactures in 1914 was \$251,480,677; in 1916 it was \$621,200,453. Exports of railway cars rose from \$3,000,000 in 1915 to \$26,000,000 in 1916. [Export figures are for fiscal years ending June 30th.]



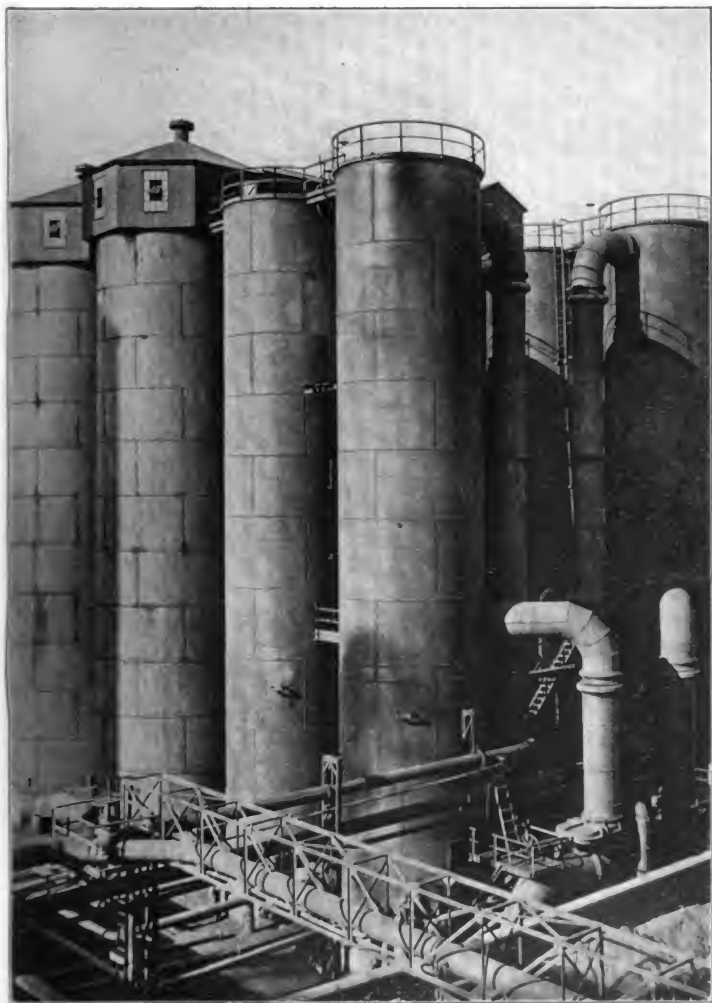
STEEL

The United States Steel Corporation has been shipping its products at the rate of 50,000 tons a day, and yet the unfilled orders at the end of September were about 80 per cent. greater than in 1915



COPPER

The dividend in copper for nine months of 1916 almost doubled that of any other full year previous. The exports of copper increased more than \$74,000,000 in the twelve months ending June 30th last



CHEMICALS AND EXPLOSIVES

The export of chemicals from the United States, owing to the cutting off of the German supply, increased \$97,000,000 in two years, while the figures of explosives exported showed an enormous increase of \$460,000,000 for the same period



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OIL

Exports of oil from the United States increased \$33,000,000 in one year. Mr. John D. Rockefeller's holdings in the Standard Oil Company, it is estimated, have increased his fortune by approximately \$300,000,000 in the last five years



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STOCKS AND BONDS

Recently the New York Stock Exchange reflected the country's war-born prosperity by having twenty-seven consecutive million-share days. In one year the value of American railroad securities held abroad was reduced from \$2,223,510,229 to \$1,415,628,563



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COTTON

Prices for cotton in October reached the highest level since the Civil War. Exports of cotton manufactures have increased \$61,000,000 in two years, though the exports of raw cotton fell from \$610,500,000 in 1914 to \$374,000,000 in 1916



TEXTILES

The demand for clothing for the armies of the warring nations of Europe has kept the great textile mills of New England and the clothing factories working overtime



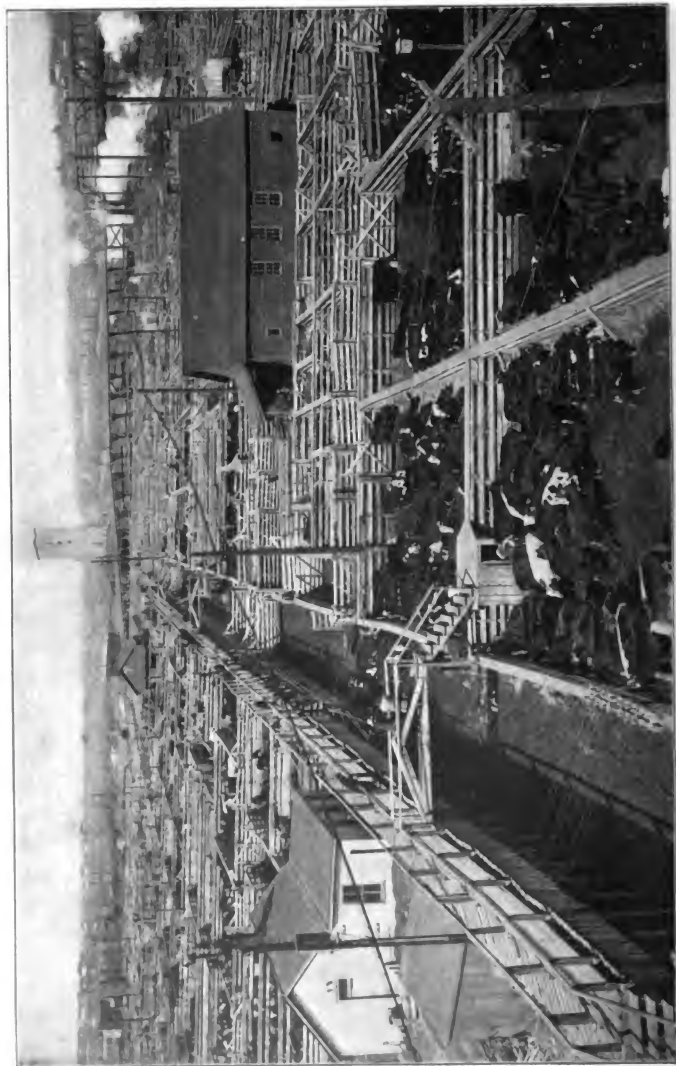
WHEAT

The wheat crop of 1916 was estimated to be only 607,557,000 bushels, the smallest crop in twelve years, compared to more than a billion bushels in 1915, and the highest prices since the Civil War, excepting the time of the latter "corner" in 1898, were being paid for wheat in the fall of 1916.



SUGAR

The value of refined sugar exported from the United States since the outbreak of the war increased from \$1,800,000 in 1914 to \$79,400,000 in 1916



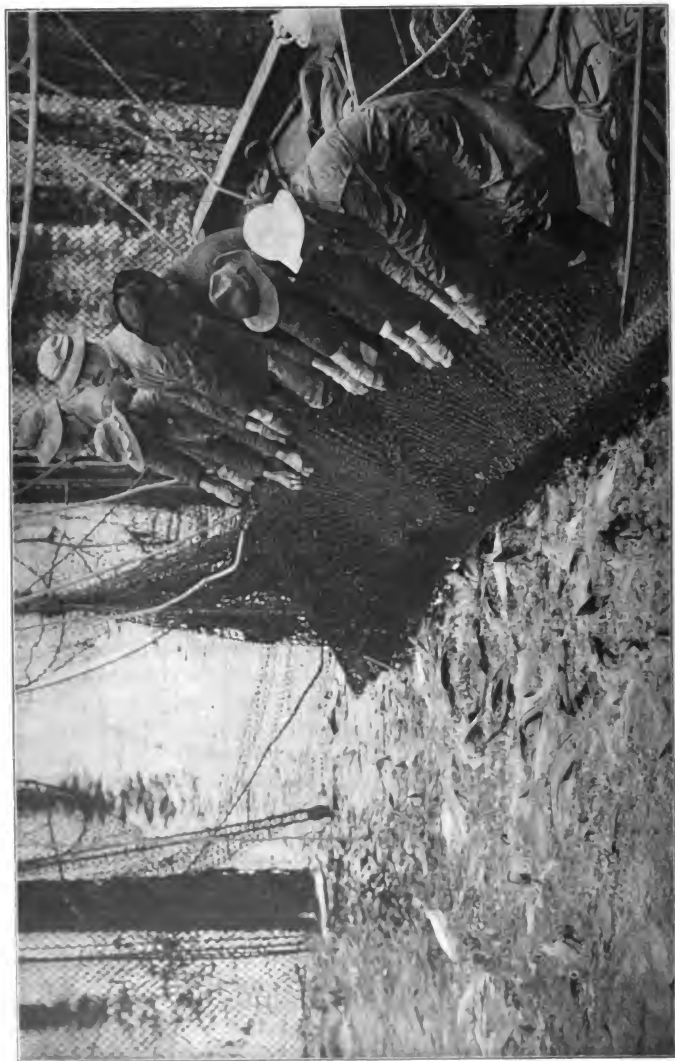
CATTLE

Although for many years our production of meat animals has not kept pace with the increase of population, yet we exported 1,400,000,000 pounds of meat in 1916, three times the amount exported in 1914



WOOL

Although the wool market in this country is still below a parity with foreign markets, the exports of wool manufactures have increased from \$4,800,000 in 1914 to \$4,000,000 in 1916



FISH

The operations of mines and submarines have seriously curtailed the British supply of fish from the North Sea since the outbreak of the war; a contributing cause which must be reckoned in the \$7,000,000 increase in the value of our export of fish in 1916

VENIZELOS

THE CRETAN STATESMAN WHO HAS MADE GREECE A MODERN NATION, WHO HAS FOUGHT HIS KING TO KEEP HIM ON HIS THRONE, AND WHO HAS STRIVEN TO BRING HIS COUNTRY INTO THE WAR ON THE SIDE OF LIBERALISM AND FREEDOM

THE first impression made by the great Greek statesman, Eleutherios Venizelos, is that he is not Greek at all. His very name suggests an association with the Venetian aristocrats who ruled his native Crete for four hundred years, while certain authorities trace his ancestry to a Florentine Duke of the fifteenth century. The physical man resembles not the dark and swarthy modern Greek, but the blond and sanguine Northern Italian. Venizelos is tall, slim, blue-eyed; his hair and beard were once brown but are now almost entirely white. His most abiding characteristic is a perpetual and inscrutable smile, which, say certain enthusiasts, recalls that of La Giaconda. In character and mental traits, Venizelos likewise has little in common with the contemporary Greek. While his fellow-countryman is excitable and tempestuous, Venizelos is always cool and deliberate. While the present-day Athenian, like the Athenian of the time of Pericles, is primarily an individualist, Venizelos constantly sinks his own egoism in his disinterested devotion to principle. While modern Greek patriotism consists, in large part, of harangues about Alexander the Great, Demosthenes, and the empire of Byzantium, Venizelos quietly tells his compatriots that "the past belongs to our dead ancestors" and plans the reconstitution of Greece on modern lines. Freeing his fatherland from Turkish massacres and from its own political and social corruptions interests him far more than reconstructing the departed glories of Hellas. To teach the Thessalian peasant how to increase his yearly crops he regards as more important, at present, than the revival of the ancient Attic language. Thus the quality that inspires all his work is sanity—a fact which, in itself, explains the tendency to regard

him as not really a Greek, but a Northern Italian, preferably a Piedmontese.

Yet all this is a misconception. For Venizelos, by ancestry, education, and aspiration, is a pure Hellene. His ancestral home lies at the foot of the Acropolis, in Athens—certainly nothing could be more Greek than that! Here his forefathers were living when the Italian admiral, Morosini, in 1687, bombarded and almost completely destroyed the Parthenon. One of his ancestors, afterward canonized as Saint Philothea Venizela, was beaten to death by the Turks in 1589 and is buried in the Cathedral at Athens. In the last three centuries the family has evidently done much traveling. It had for many years a large estate at Pylos, in the Peloponnesus; thence it moved to Crevata, in Sparta, and thence to the much-suffering island of Crete. The old inhabitants of Mourniès, a beautiful suburb of Canea, tell interesting stories of the birth of the present Venizelos. His mother had already had three children, all of whom had died at birth. Her husband and relatives, on the expectation of another child, called to her assistance all the supernatural powers in the neighborhood. For two days and nights, while the mother was in labor, four priests, two Mohammedans and two Christians, prayed unceasingly in an adjoining room. One of these priests, a Greek who died only four years ago, never wearied of telling this story; the fact that the child lived, and lived to become the maker of modern Greece, he always regarded as due to this special divine interposition. This same priest baptized the boy—the year was 1864—and the name selected, Eleutherios (meaning Deliverer), was happily adapted to the child who, in the next fifty years, was to save several million Greeks from the ravages of the Turk.

If we wish to understand the real

Venizelos, we must skip the succeeding half century and transport ourselves to the Athens of 1910. On a day in late September a huge crowd gathered at the Piræus, the Athenian seaport; several ships and smaller craft had put to sea, evidently to meet a much anticipated guest. Small newspaper gamins were rushing up and down the streets, selling their extras and crying, "He comes! He comes!" and Athens was bedecked as for a royal visitor. All these preparations had been made to greet a citizen whose name, up to half a dozen years before, had hardly extended beyond his native Island of Crete.

The affairs of Greece were then in a difficult state. All kinds of troubles, internal and external, had reduced the nation almost to a condition of chaos. The treasury was nearly bankrupt, the army and navy were reduced to a state of childish impotence, the people were wretchedly poor and unemployed, a political revolution had started, and the King was so unpopular that hardly any coffee house in Athens dared to display his portrait. Above the little nation loomed the threats of what then seemed a revitalized Turkey. A Turkish revolution, breaking out two years before, had founded—or seemed to have founded—a constitutional system, and one of its chief ambitions was the reestablishment of the Turkish Empire. Already the Sultan had reasserted his vague suzerainty over Crete; already he had showed signs of menacing once more distracted Macedonia; already the Turks, by many threatening actions, had given hints of savage encroachments upon Greece. Within and without, Greece saw nothing but evil, with a strong possibility of national dissolution. In their anxieties and distress, the people felt they needed a leader—a leader of different calibre from the self-seeking politicians who had already brought the nation to its present plight. Where were they to find him? This question almost answered itself. Instinctively and unanimously the nation turned to the Island of Crete—the island that had furnished the path along which ancient civilization had first reached

Hellas, and which, in classic times, had given the motherland many of her most famous lawmakers. Here, the people learned, lived the one Greek who apparently had the full stature of a statesman. Venizelos seemed the one man who could lift Greece out of her despair and possibly quicken her into a new birth. The Military League, a revolutionary, anti-dynastic group which dominated public affairs, had summoned the Cretan statesman to Athens, practically that he might assume this task. The people, therefore, had turned out on this September day to welcome the man whom they now hailed as their "deliverer."

THE MASTER OF THE GREEKS

Hardly had Venizelos reached Athens when he showed the metal of which he was made. The cheering crowds gathered in front of his hotel, the Cretan statesman accepting their greetings from the balcony. His first words somewhat chilled the popular enthusiasm. He informed the people that his purpose was not to destroy the King or the dynasty, but rather to work sympathetically with them. "I will coöperate," he said, "with those whose aim it is to raise Greece morally and materially to the level of other modern states and to make her the great factor in civilization and progress in the East." Then, descending to details, he discussed the assembly which was about to convene for the revision of the constitution. The radicals demanded that this assembly be "constituent;" this meant that it should change the organic law in its fundamentals, practically eliminating the King. Others believed that it should be "revisionary"—in other words, that the change should affect only certain details and leave the dynasty intact. Venizelos, as he now informed the crowd, took his stand with the moderates.

"My criticisms upon the inertia of royalty," he said, "have been misinterpreted as anti-dynastic. On the contrary I believe that it is to the nation's interest to show its devotion to the reigning dynasty and I, therefore, consider that the assembly should remain revisionary."

But the crowd did not like this. "Constituent! Constituent!" it shouted.

"Revisionary!" repeated the speaker.

"Constituent!" the mob replied, even louder than before.

Venizelos leaned over the balcony and fixed his cold blue eyes upon the populace.

"I say revisionary," he declared, calmly but decisively. The tumult was stilled at once. Quietly the crowd departed, convinced that Greece had found not only her deliverer but her master.

THE UNDESIRABLE TURK IN EUROPE

In his public life in Crete, extending over nearly thirty years, Venizelos had shown precisely this quality of determination. Here he had played his part as lawyer, statesman, patriot, revolutionist; his career had shown his native island, and afterward Greece, essentially a new type of public man. Above all he had the tenacity to form a definite plan and to pursue it to the end. A statesman, in his conception, was not a conglomerate of oratory, manifestos, futile revolutions, and internal dissensions, but a man who worked steadily, unselfishly, insistently toward a goal. A man of iron will, few words, insatiable capacity for work—such was Venizelos. And now, in Greece, where, after a few months, he became Prime Minister with a large supporting ministry, he had abundant opportunity to exercise these qualities. He accepted his new responsibility with a definite purpose. He intended to reform Greece internally, to abolish corruption in legislation and administration, to improve economic conditions, increase commerce and agriculture; all this as preliminary to his larger, more splendid task, which was to put Greece in condition to meet certain pressing external problems. He aimed at definitely solving the "Eastern Question"—a "question" which, for a hundred years, had hung over Europe like a nightmare. The "Young Turks," in their brief ascent to glory, had clearly proved that there was only one solution of the Balkan question and that was the removal of the Turk from Europe. Precisely how to accomplish this translation was the problem that

had long vexed the greatest statesmen. Almost any large nation by itself—Great Britain, France, Russia, Germany—could easily have accomplished it; but not one could permit any such enterprise. Until these several Powers could decide precisely how to divide the Turkish garments, the Sultan must be permitted to massacre his Macedonians in peace. That there could be any other solution had occurred to hardly a soul. That the Balkans themselves might solve the Balkan problem was a suggestion altogether preposterous. True, several non-Turkish nations, for the most part hardy and courageous—Serbia, Bulgaria, Rumania, Greece—occupied the Peninsula, and these nations, by joining hands, might make things unpleasant for degenerate Turkey. No one would have suggested, however, in 1910, that these peoples could keep together long enough for a sustained military enterprise. They hated each other more than they hated the Turk; even less harmoniously than the European Powers could they apportion the Mussulman inheritance. But Venizelos nourished this wild ambition; he believed that he could accomplish, in a few years, what the greatest statesmen of Europe had not accomplished in a century. The Powers, he once said, referring to their handling of the Balkan situation, "are a lot of old women." They could never stop the massacres and drive the Turk back into Asia; very well, then, said Venizelos, why should the Balkan states not do this themselves?

SCHOLAR, ESTHETE, REFORMER

But Venizelos did not make the mistake of thinking out loud. When he landed that September morning, he was probably the only man who really understood why he had come. This silent ambition explains why he objected to plunging Greece into civil war by starting a campaign against the ruling dynasty. It explains, also, his refusal to waste the energies of Greece in the pursuit of unattainable ends, such as the conquest of Constantinople. No, his first reforms took a much more homely form. "I do not promise," said Venizelos in a public speech, "that the Government will in-

augurate the golden age in a day; the disease has been serious and its treatment will take long." His career, for the first few months, resembled that of a "reform" governor in an American state—a Hughes in New York, a Wilson in New Jersey. He drove to obscurity many a political "boss," and he relied, for the success of his programme, upon an intelligently aroused public opinion. He instituted a series of reforms which practically changed the aspect of life in Greece. Until his arrival the courts had not dispensed impartial justice; politics and vengeance had often regulated their activities. Venizelos completely reorganized them and made justice available to the humblest plaintiff. He did much for education, strengthening the University of Athens and creating more than two hundred new municipal schools. For years the finances of Greece had been a hopeless maze, but now, under the directing hand of Venizelos, they were reduced to a system. He enlarged and increased the efficiency of the police and the postal and telegraph services, and organized a new ministry, which dealt with trade, industry, and agriculture. State engineers now began to travel over Greece, giving the farmers instruction in agriculture, teaching them how to increase the old crops and how to raise new ones. Other reforms have quite an American ring. He adapted a state scheme of workmen's compensation and insurance and passed laws regulating the working conditions and working hours of women and children. Nor did he ignore more esthetic things. He exerted all his influence to encourage art and literature; he decorated writers and showed great interest in the theatre and the opera. Venizelos's love for letters comes out on all occasions. When a revolutionist in the mountains of Crete, he whiled away the idle hours by learning English, a language which he now speaks perfectly, and he seldom attends a session of Parliament in Athens without a copy of *Antigone* or other Greek classic in his pocket.

"How are things at the theatre?" he would frequently ask. "Is so-and-so's play a success?"

Venizelos also gave Greece a modern army and navy. The work which he had planned for his country demanded force; when the moment arrived, he proposed that Greece should be prepared. The mere fact that he was permitted to call in foreign advisers showed the ascendancy which he had secured over the Greeks, who do not willingly admit that any other nation can be their instructors. French officers were now brought in to reorganize the army, and English naval experts to put new life into the navy. Most European observers, recalling the Greeks in the Turkish war of 1897, laughed at the idea of a Greek army—a point on which they soon changed their minds. The army had not more than 40,000 men when Venizelos began his work; in a couple of years Greece put into the field 200,000 men, completely organized and equipped—a splendid fighting force.

A GREAT DIPLOMATIST

But Venizelos scored his greatest triumphs in diplomacy, in which he accomplished the impossible. The tactful Turks, who, in 1910, perpetrated one of the most frightful Macedonian massacres in history, considerably seconded his efforts. Still the way was beset with difficulties. Diplomacy is proverbially secret, but ordinary secrecy hardly compared with the silent ways of Venizelos in the year 1911. Only one other Greek besides Venizelos—and that was King George himself—had the slightest inkling of his manœuvres. Even the Greek minister at Sofia remained in ignorance. In Bulgaria, King Ferdinand and his Premier, Gueshoff, alone were let into the secret. Venizelos and Gueshoff coded and decoded their own messages, not daring to trust the ordinary office force, and confidential messengers carried them from capital to capital. Venizelos proposed that Greece and Bulgaria join forces in the interest of the Christian people in Macedonia and also form a defensive alliance against the Turk. The treaty, as finally drawn up, took practically this form. It contained no tentative division of Turkish territory between Greece and Bulgaria, a detail which Venizelos omitted purposely, as

he knew that any attempt to argue on this point at that stage would have wrecked the negotiations. In May, 1912, after many months' labor, the treaty was signed. Already Bulgaria and Serbia had formed an alliance, and so the three powerful nations of the Balkans, thanks to the energy of Venizelos, now found themselves ready for their heroic task.

Even Venizelos himself was surprised at the rapidity of the crisis. He had planned three years of preparation before the allies started to free the Balkans from the régime of blood and lust and rapine that had devastated them for nearly four hundred years. Within a year after signing the pact, however, the Bulgarians were pounding at the gates of Constantinople, the Greeks had captured Saloniki and a considerable part of Epirus, while the Serbs had driven the Turk from Macedonia. The fury of these campaigns, the completeness of their success, and the splendor of the object which they eventually attained made them almost unparalleled in European history.

ENDING THE TEUTONIC DREAM

And now the life drama of Venizelos was played upon a larger stage. In building a new Greece, giving life to her institutions and fitting her to play the leading rôle in destroying the Turk, he had outwitted all the chancelleries of Europe. And he had done more than that—for he had placed himself directly athwart their ambitions. The Central Powers had already marked out the Balkans for their own. For three thousand years the road from Europe to Asia had lain from Vienna to Nish and through the valley of the Vardar to Saloniki. This the Central Empires had long since determined to control, as an essential part of their proposed dominion in Asia Minor and Mesopotamia. And now Venizelos, in less than three years, had destroyed these lofty aspirations. His plans, the Central Empires believed, and their belief was probably justified, included more than a brief military campaign. A permanent Balkan alliance, perhaps even a Balkan Confederation, which should link these states into a union powerful

enough to resist forever the Germanic encroachment, and bar forever its high road to the east—this was the plan of Venizelos. And this explains the fact that the Balkan enterprise, after achieving this splendid triumph, ended in a tragedy.

BULGARIA'S TREACHERY

Precisely what happened is not yet clear, and probably will not be until many carefully concealed documents are made public. To a considerable extent Bulgaria acted probably without prompting. Her king aimed to make Bulgaria the Prussia of the Balkans; in attaining this end he used the usual Prussian methods and showed the traditional Prussian scruples. Most well-informed writers believe that Austria also egged him on. An attack upon his allies, Austria urged, would make him master of the Balkans; if circumstances necessitated it, the Austrian army would come to his assistance. Austria's benevolent purpose, of course, was to destroy the Balkan alliance, largely undo the work of the Balkan War, and eventually open Austria's way to Saloniki. Hence Bulgaria's treacherous attack on her allies and the second Balkan War, with all its horrors. But the conspiracy did not succeed. The work of Venizelos was not yet undone, and the war ended with the road to Asia still barred to the Central Powers. Bulgaria's disastrous experience, the failure of Austria to come to her rescue, the march of Rumania toward Sofia—all this is now a familiar story. Probably the fact is that the Central Powers, in 1913, were not quite ready for a European War, and the net result of the whole proceeding, so far as Venizelos was concerned, was to arouse an intense bitterness toward Bulgaria. The feeling was not a personal one; his disappointment was that this Balkan state had proved a traitor to the Balkan cause, and had showed herself unworthy to play her part in his splendid Balkan programme. This fact in itself justified what some regarded as the harsh treatment meted out to Bulgaria at the peace conference at Bukharest, over which Venizelos acted as the presiding genius. Despite her treachery Bulgaria came demanding, among

other things, the port of Kavala. But nothing would induce Venizelos to grant this. Kavala, for strategic reasons, was indispensable to the safety of Greece. "How could any one ask me," he said to a friend, "to give up the life and fate of people of our race to men who can only exterminate and devastate? A question of civilization is at stake. We shall not abandon men of our tongue and of our race to the fury of the conquered."

THE PEACE CONFERENCE AT BUKHAREST

Before starting for Bukharest, Venizelos had a long session with King Constantine, at which they drew up the map of the new Greece. As he left, Constantine took him by the hand, for a final good-bye.

"Farewell," said the King. "A speedy return with our beautiful daughter, Kavala!"

"That I promise you, sir," said Venizelos.

At this peace meeting, Venizelos showed himself in his iron mood. He told Bulgaria bluntly what the settlement would be and refused to modify his terms. The Bulgarian delegates constantly attempted to make secret deals with Rumania and Serbia at the expense of Greece, but to no purpose. They even offered to bribe Greece with the promise of Macedonia, but Venizelos answered their advances merely with a smile. The Bulgarians threatened, pleaded, whined, but the Greek Premier remained firm. "We know we are beaten," the Bulgarian diplomats said, "but make it possible for us to regenerate ourselves. Do not destroy Bulgaria."

"You exaggerate the situation," coldly replied Venizelos. "You are not defeated yet. The war is not yet over—we don't know how it will end. You can go on with it if you chose. We are willing to."

There was certainly not much comfort in dealing with a man like that. "What a discussion!" said one eye witness. "It was a regular duel. The two parties fought with incredible stubbornness. M. Venizelos was more wonderful than any of them; he rose to the height of oratory, repulsing the arguments of his opponents. This magnificent defense of Hellenism has not been recorded, but the results will remain though the words are forgotten."

The end, as Venizelos had promised the King, was that Greece retained its "beautiful daughter."

"When the bill has been sent in," said one of the Bulgarian delegates, as he grimly signed the treaty, "it has to be paid." M. Tontchef, another Bulgarian negotiator, explained the diplomatic success of Venizelos in one phrase:

"He is a charmer!"

Having led his country through two wars and doubled the territory of Greece, Venizelos, it might seem, was entitled to a rest. Instead, he immediately began to consider plans for consolidating the new Greece and improving the nation economically. And, as usual, he showed his preëminent sanity. The jingoes who began shouting for more wars and more conquests found him unsympathetic. His life work, he believed, was now cut out. "We have enough," he said, "with what we have now. We must get all in order now; we need rest and peace to organize our new provinces."

THE THREAT OF HOHENZOLLERN DOMINANCE

But rest he was not to have. Greater forces than Bulgaria soon disputed the new Balkans which Venizelos had made. The Austro-German Powers did not propose to abandon their plan of an Asiatic empire, to which the Balkans were an indispensable gateway. Venizelos immediately saw the position into which the European War had forced his country. A Germanic triumph meant the complete undoing of his life work, the obliteration of the independent Balkan states and an Asia Minor, in which lived nearly a million Greeks, under the domination of the Hohenzollern. The triumph of the Entente, however, would insure the permanence of the new Balkan régime. The situation was perfectly clear, and Venizelos acted promptly. Greece, he urged, should intervene with her army on the side of her traditional friends. So grave did he regard the situation that, in memorials addressed to King Constantine, he recommended the extreme sacrifice. He would give Bulgaria that "beautiful daughter, Kavala," in order to obtain her coöperation. In exchange, Greece

would receive large sections of the coast line and islands in Asia Minor, land which was now, as in the days of Homer, populated largely by Greeks. "Sire," he wrote the King, "I firmly believe that we should lay aside all hesitation. It is unlikely and it is improbable that such an opportunity as is offered to Hellenism to-day to complete her national restoration will ever arise again. Under these circumstances how can we let slip this opportunity which Divine Providence has given us to realize our most daring national ideals, to create a Greece enfolding almost all the lands when Hellenism reigned supreme during its long history, a Greece comprising very fertile territories which would ensure our preponderance in the Ægean Sea?"

HIS DISAGREEMENTS WITH CONSTANTINE

The Balkan wars had left Greece with two national heroes—Constantine and Venizelos. Now began the duel between these two strong men. For twenty years Venizelos had had varied relations with the royal family. In Crete he had served as counselor to Prince George, made High Commissioner in Crete by the Powers in 1898. The two men had differed on policy, as a result of which Venizelos had been dismissed from his office. The disagreement was not personal: the Greek simply believed that Prince George was pursuing a course that would prove disastrous for Crete; the failure of the Prince, and his own subsequent retirement, showed that Venizelos was right. When the Cretan came to Athens in 1910, as Prime Minister, King George still nourished the old resentment. But Venizelos made the first movement toward a reconciliation, going to the Palace and signing his name in the visitors' book. The stand which he took on the side of the dynasty removed the last traces of ill feeling. The Kaiser, whose sister was the Greek Crown Princess—now the Queen—was so delighted at the Cretan's success in rehabilitating the dynasty that he invited him to visit him at Corfu. Still, the attitude of Venizelos toward royalty was a rational one. "The Greek nation," he said, "will remain monarchical so long

as its sovereign keeps within the limits of the Constitution. The King is a hereditary monarch, whose father was elected by the Greek people. There is no divine right in Greece." He early evinced his displeasure at the inclinations which Constantine showed toward Teutonism. He regarded the Kaiser—long before the European war started—as Constantine's evil genius; the Kaiser, he knew, was filling his brother-in-law's mind full of his own hatred of democracy. Soon after the Balkan War, Constantine showed his Germanism most offensively. He made a spectacular visit to Berlin, and, in a public speech, declared that Greece owed her great victories in the Balkan wars to the fact that he himself had obtained his military education in Germany! The egotism of this was sublime in that Constantine apparently attributed these victories to his own generalship. But the fact was that French officers, under General Eydoux, had trained the Greek army; and naturally France was highly angered by this *maladroit* speech. Venizelos immediately took a train for Paris, and, at a banquet in his honor, made an address of his own, in which he said that the Greek army owed its success to its French instruction. Constantine regarded this as a slap in the face—as, indeed, it was, although one that he had abundantly deserved. But Venizelos did not make this trip merely to rebuke the King; as a matter of state policy, France, the friend of Greece, could not be left with the impression that Constantine's ridiculous statement represented the Greek view. But Constantine has cordially hated the Prime Minister ever since.

DEMOCRACY VS. AUTOCRACY

In the great issue that now divided Venizelos and his king, however, there was no room for personalities. Fundamentally, the question was the same that has split Europe into two armed camps. It was the issue of constitutionalism, of democracy, against autocracy. The newspapers, in discussing the Greek situation, have unduly emphasized the fact that Constantine's consort is a Hohenzollern princess. But the Greek King is hardly

a man to be henpecked on this heroic scale. His nature is essentially autocratic; he admires the Germanic system, and believes that Germany, if she does not conquer, will at least not be beaten. His great crime as King is that he has subverted the Constitution. It is the strength of Venizelos that he is upholding it. He recognizes the historic fact, which many who discuss the situation in Greece forget, that the Greek state is the creation of England, Russia, and France. Had it not been for these nations, there never would have been any modern Greek nation. It is well to bear in mind the guarantee given by France, England, and Russia in 1863, when the Danish George became its ruler. "Greece, under the sovereignty of the Prince of Denmark," reads this momentous document, "and the guarantee of the three courts, forms a monarchical, independent, and constitutional state." This guarantee, in itself, abundantly justifies the intervention of the Entente in Greek affairs. For Constantine's whole policy has destroyed the constitutional system which the three Powers have guaranteed. Venizelos, as Prime Minister, was the representative of this constitutional power. When the King negatived his policy and dismissed him from office the Greek people, by overwhelming votes, reinstated him. But Constantine refused to accept the verdict, and proceeded to rule irresponsibly, in defiance of the popular will. That is, Constantine overthrew the Constitution and attempted to establish an autocratic system. Venizelos has met this situation in the only patriotic way. He has set up a new Greek Government at Saloniki, independently of the King and supported by the Entente. In doing this, he has acted in harmony with his whole career.

One part of Venizelos's life is complete. He has lived to see his early dream fulfilled. His energies as a young man were directed to one end—the elimination of the Turk from his beloved Crete and its union with Greece. The Greek flag now flies over Crete. For this, Venizelos, as a young man, had organized his mountain bands of revolutionists; for this he had fought and intrigued against the Euro-

pean Powers, who for a century had backed and filled over the great "Cretan Question." Externally unemotional, there is said to be only one thing that brings the tears to his eyes—and that is Crete. Just before the first Balkan War began, Venizelos played the chief part in what was probably the most thrilling incident in his life. As Prime Minister of Greece and President of the Council, he ascended the tribune in Parliament one day in October. The building was packed with enthusiastic members and citizens, and suddenly the assembly burst into the wildest uproar. The occasion was a group of modest looking gentlemen who were proceeding, amid the densely crowded Parliament, up the hall. Nearly everybody, including Venizelos himself, was weeping. These new arrivals were the deputies from Crete—the first members elected to sit in the Parliament of that Greece of which they now formed a part. As soon as Venizelos could control himself, he began to speak, telling the story of the Cretan fight for freedom, and also relating the greater struggle in which Greece was about to engage—the war that was to drive the Turk from the Balkans. Then, turning to the deputies, amid the wild cheers of the assembly, he said:

"In the name of the Greek people I welcome the delegates of our Cretan brothers present within these walls."

After a separation of four hundred years, this reunion was certainly something to rejoice over, and Venizelos was the man who had accomplished it.

A great man, this Venizelos. Nothing finer than this lonely figure, striving against insuperable odds for principle, fighting to save his mercurial Greeks even against themselves, has been produced by the war. A melancholy figure, too, a man whose life has been darkened by a great domestic sorrow. His wife, whom he married when a young and successful lawyer in Crete, died giving birth to his second son. Venizelos has never married again; he has always remained poetically devoted to her memory. He has lived only for Greece—the Greece which, a hundred years from now, will include him among her Plutarch's men.

CHINA, AMERICA'S SILENT PARTNER

ITS AFFECTION FOR THE UNITED STATES, AND ITS DISAPPOINTMENT OVER OUR FAILURE TO
LEND PRACTICAL HELP IN ITS PRESENT NEED—THIS THE GOLDEN HOUR IN WHICH
CHINA LOOKS TO US TO FINANCE ITS DEVELOPMENT AND SO SAVE IT FROM
ITS ENEMIES—ITS POLICY AS IT AFFECTS US NOW AND HEREAFTER

BY

JEREMIAH W. JENKS

IT WAS my good fortune to spend the greater part of the present year in the Far East. I was particularly fortunate in reaching Peking while President Yuan Shih-kai was still alive. Talking with him, as I did, and with those who might be accepted as representative of the older school of Chinese statesmanship, there was opportunity to receive impressions and to compare them with impressions of that younger school which must inevitably take up the task of carrying China through the next fifteen or twenty years. These were historic days in the capital of China.

No one knew better than Yuan that a turning point in China's history had come. With a frankness as pathetic almost as it was astonishing, during my last interview with him he talked of the advisability of his making public announcement of his approaching relinquishment of office; he told me of the transfer of power that he was then making to the Cabinet; he pointed out the real difficulties involved in the turning over to another of the supreme command of an army that had been built up and trained by himself, most of whose officers were his personal appointees and friends. They might well revolt if the change were made without due consideration of their wishes. He commented drastically upon the aggressive intentions of some of China's neighbors, and the need of care and foresight and harmony to safeguard China, and of his own readiness to make personal sacrifices to secure the needed harmony. He clearly realized that a great change was impending; but neither he nor I thought the final change for him was to come so soon; for, as when he greeted me he spoke cor-

dially of our earlier discussions years ago regarding China's finances, so on my taking leave he expressed a wish to talk again, in detail, about the possible measures to be adopted to reestablish on a sound basis China's finances when the immediate political crisis was over, as he thought it would be in a few weeks as a result of mutual concessions and disapproval of extreme action by both parties. He foresaw the impending political change. He knew, too, that he was seriously ill, though to me he appeared in his good nature and mental alertness in better physical trim than when I had visited him twelve years before. But he did not then foresee the swiftness of the blow. In a little more than a month he was dead.

Many things happened in a mere fraction of time. The passing of Yuan meant the end of an era. The solidification of the republic under President Li Yuan-hung, upon whom all parties united (a man whom all liked and whose fine qualities Yuan lauded even while he held him a prisoner), set in motion new forces whose activity must mean much in one way or the other to the United States and to every other first-class Power.

Doubtless, some attention has been given to the press dispatches from China concerning nominations to the ministry of foreign affairs in the new cabinet. Controversy has concentrated upon this portfolio; and (among others, to be sure) one explanation is the realization of president, premier, and parliament that the new foreign minister must be a man of great talent as well as one inspired by indomitable courage and unwavering patriotism. He must needs be a man, also, whose character inspires confidence. China,

too, is taking stock of international conditions and her own needs.

American interest in China antedates the foundation of the American commonwealth as a separate political entity. Fortunately for us and for China, the history of the last hundred years has been enriched by the contributions of great Americans who have led the van in unselfish devotion to the cause of the least understood and most misrepresented people upon the face of the globe. Greatest among these was Anson Burlingame, who died at Petrograd in 1870 while pleading for justice to China. Thanks to Burlingame, Ward, Rockhill, Hay, and other far-seeing men, China's love for America has become a tangible asset to us who live after them.

In China one often hears expressions such as "the Chinese respect the British, they love Americans, and suspect the Japanese." Generally speaking, that might be regarded as a very fair statement of the case. And history both explains and justifies this popular feeling among the Chinese.

The Chinese would not be human, they would be lacking in fundamental patriotism, if they could so soon forget the Opium War, for, however just in international law British excuses may be, and however venal the acts of some Chinese officials of those tragic days, the Chinese still condemn the British for fastening this enervating curse upon them by force of arms. They still resent the alienation of Hongkong and the gunboat policy which brought in its train intrusion and aggression on the part of Russia, France, Germany, and Japan. But—and the fact is typical of the just trend of Chinese reasoning—with absorption of concessions, enforcement of alien-made laws by alien officials, and occasional abuse of authority by consular officers and others, there also came to China in gradually increased proportion from the foreigners practical manifestations of Western sanitary methods and outlets for commercial and industrial enterprise which were barred to the Chinese living beyond the limits of the Treaty Ports and under the soddening influence of Manchu man-

darins, stubborn in their ways and jealously clinging to a system which, as an "old China hand" once expressed it, "always seemed at its last gasp only to cheat the mourners and shake its shroud in the faces of its dupes." British enterprise on the Yangtze; the wonderful modern metropolis which greets the Chinese and foreign visitor at Hongkong, a new Corinth in Asia carved from a barren rock; Shanghai, Hankow, Tsingtao, Dalny—the material advantages as well as the inspiration which these "foreign-style" cities brought with them, soothed the wounded feelings of patriotic Chinese. And they grew to respect the British because British *taipans* and British ships of trade, as well as British bluejackets and gunboats, led the van.

We had no part in forcing opium upon the Chinese. We had no part in alienating China's domain. We had a part—an active and a leading part—in aiding China to cast out the seven devils distilled from the poppy. We had a part—again, an active and a leading part—in saving China's domain for the people of China.

WHY CHINA "SUSPECTS JAPAN"

So the Chinese love us, as they respect the British. Why they suspect the Japanese is another story.

"Just because China has in the past been composed of small groups of individuals bound together as families," says Bishop Bashford, in "China: An Interpretation"—a book, sane, sound, and inspiring, that Americans should read—"and just because on the other side of the straits a far smaller number of Japanese have recently become inspired with a devotion to the nation and to the race and are moved by a common impulse, Japan has become stronger than China. The transition of civilization from the family to the national stage is the most marked characteristic of the last fifteen years of Chinese public life; and the time is speedily coming when the three or four hundred millions of Chinese welded together as a nation will be invincible to any foes which may be hurled against them."

This is a judgment not at all anticipated by most Western people. But the accur-

acy of the comparison and the facts supporting the Bishop's prediction will not be questioned by impartial authorities who really know conditions. As to the use to which Japan has put and is putting her strength there is controversy. Japanese militarist-expansionists have aroused uneasiness in this country. In China, with Japanese troops occupying many strategic points *inside China's domain*, with official, semi-official, and unofficial Japanese meddling in purely Chinese domestic matters, with Japanese guards blatantly calling attention to their unwelcome presence by daily marching through the streets of Peking with beating drum and shrilling fife, with the ink still wet on the treaties of May, 1915, invading China's sovereignty and, substantially from the political viewpoint, confiscating large parts of Mongolia and Manchuria, suspicion of Japan charges every atom of the atmosphere. It could not be otherwise.

AMERICAN MISCONCEPTIONS

Yet it must not be assumed that this suspicion is necessarily permanent. Too many Americans, especially those who have read slightly, but not thoroughly, recent and remote Asiatic history, assume that "some day, perhaps soon, China will wake up, and save us the trouble of calling the Japanese to account." Of course, that is a very crude way, and a very selfish way, of regarding the future of two friendly nations. The idea obtains, however; therefore, it should be removed. To remove it, one must admit that it is present.

There is another very important misconception which is generally prevalent in America, scarcely less prevalent in Japan, and accepted to a greater or less extent in some parts of China, chiefly the South and Southwest. This is the belief that Yuan Shih-kai was the inveterate enemy of Japan and stimulated hatred of the Japanese for his own purposes. As a tangent of this misconception comes the idea that now, Yuan being dead, no obstacle remains to an immediate accord between China and Japan. This view represents the other horn of absurdity.

The seeds of Sino-Japanese rivalry and

suspicion (as the scholars and statesmen of these two nations appreciate) were sown in days when even Eastern civilization was comparatively young. The exact origin is clouded, mystified by ancient and usually contradictory traditions and legends. This much—and only this—seems certain. Japan drew her cultural inspiration from China; for many centuries Chinese superiority was unchallenged; then, as so often happens, the pupil fretted under the hand of the master. For almost two thousand years, with occasionally long intervals, China and Japan had issues of sorts—sometimes sanguinary—in Korea. It was Yuan's fate and fortune to play the final pawn for China in the Hermit Kingdom. The fact may not have assisted him into the good graces of Japanese jingoes. But I doubt very much if it justifies the belief that he nursed hatred against Japan. He was too bold and calculating an opportunist to continue a hatred or a fear no longer justified by conditions that survived.

I mention these matters because they are vital to Americans who seek knowledge of the forces now at work in China. As Lord Clarendon once observed, "a well-educated fiction may be made more efficacious than an uncultivated fact." The fiction as to Yuan will not down. It *might* be utilized to draw Japan and China closer together with consequences not altogether advantageous to the United States. I do not think that is likely to happen; but it might happen under certain circumstances which I shall endeavor to indicate as briefly as possible.

THE BIRTH OF CHINESE NATIONALISM

A new spirit is breathing over China. Chinese nationalism is rapidly becoming real, much more rapidly than most Americans think, I find from my conversations of the last month since my return from China. The tendency of this nationalism is along republican lines. The Chinese love us, as has been said; and they have paid us the compliment of drawing the political inspiration for this new Chinese nationalism from our history, from our ideals, from our institutions. But, as "you cannot make bricks with-

out straw," you cannot reorganize the entire social, political, and industrial life of a country without money. Which nation is going to finance the reorganization of Old China into the New China which, indisputably, is destined to become a great power in the family of nations?

Financially speaking, nations—and especially progressive nations—may be divided into two classes: debtor nations and creditor nations. Progress and prosperity are the children of investment. Our wealth of to-day is being reinvested in part in the financial sources whence it was derived. When our forefathers crossed the Mississippi and opened up the great West, the necessary capital was not here. We got it from Europe. Our railroads were not built, our mines were not opened, even our grain was not grown and reaped by merely American gold. If circumstances had compelled us to finance all our own opportunities, we could not have arrived at the high plane of prosperity on which we find ourselves to-day.

Japan is bustling with energy, flushed with industrial prosperity, to-day. She is recognized as a first-class Power where, within the lifetime of many among us, she was an unconsidered trifle in the international politics of the world. For decades in Europe and in America, the word "pretty" occurred as one thought of Japan—not the word "powerful." The Japanese have wisely conserved and preserved those votive offerings to the beautiful which became traditional in the occidental mind. But the Nihon of Yamagata, Okura, Okuma, Shibusawa, Kaneko, Sakatani, and Terauchi is very much of the present in the arts of peace as well as in the arts of war. The Japan of Lafcadio Hearn is as definitely dead as the England of Queen Anne or the Babylon of Daniel. The Government and the bankers of Great Britain financed the transformation.

THE "WILD WEST" OF THE FAR EAST

As a purely business proposition, no qualified appraiser would compare the fundamental resources of Japan, fifty years ago or to-day, with the resources of China. The most conservative estimate

establishes China as the most alluring field for development submitted to the consideration of the investor at any one time in the world's progress. China under the Manchus resisted the foreign investor; China under the Chinese invites the foreign investor.

"Industries are the roots; culture and statecraft the flowers of a nation," says a Chinese proverb which was old many centuries before the seventh Henry gave England a uniform system of weights and measures. The Chinese are eagerly alive to the necessity of immediately industrializing their country along up-to-date lines. They share with the United States the natural advantages of vast territory so situated as to provide an ideal variety of soil and climate. The unscratched mines of China, China's unrivaled labor market, the wool, the silk, the tea of China, are matters of every-day knowledge and gossip. The moment has come when these huge forces are going to be harnessed to modern mechanical methods of economical production. There will be no lack of capital; the question is: Whose capital will do for China what British capital did for Japan?

The answer to that question cannot but affect the future foreign policy of China, the relations between the United States and China, the peace of the Pacific, the exact terms upon which the fully developed West will meet the fully developed East.

It was not accident which induced American interest in China and Japan; it was partly a wise and statesmanlike foresight, but none the less it was and is necessity. Some people would ascribe this interest to Providence; that it has been providential and can be made increasingly profitable is self-evident.

The development of our Western seaboard, which is being hastened by the new traffic through the Panama Canal, demands a wider and fuller participation in the commerce of Asia. Even if we would, we cannot close our eyes—and we would not—to the fact that we are as much a Pacific nation as we are an Atlantic nation. We must do business on the Pacific; it is the part of prudence and of foresight to utilize our commercial

bases in the Pacific—Honolulu and the Philippine ports of call. The future necessities of this country, of the East and the South as well as of the West, will dictate the operation of whatever measures may be essential to the maintenance of a prosperous Pacific carrying trade. The time is not far distant when Americans traveling on the Pacific Ocean will no longer have to look in vain for an American flag on that wide and potential international highway. We need these ships which we have not. We need the trade to make operation profitable. The bulk of this trade is in China.

THE INTENSELY PRACTICAL CHINESE

China is well aware of these facts. Like our own people, the Chinese are intensely practical. Their natural bent is business.

For business probity, the Chinese have an unblemished record. And yet their nature is no less heroic when heroism chimes with duty. One of my friends long resident in China whose life was frequently in peril during the Boxer trouble, when he was able to rescue a score of missionaries, never tires of telling of his "fat boy"—only a personal servant, whose ready wit, fertility of resource, and sheer dauntless daring repeatedly saved his master's life, but whose chief care in these piping times of peace is to save his master's pennies by outwitting the egg dealer and the butcher and saving scraps and pieces, besides looking after clean food and sanitary clothing. Ward and Chinese Gordon found their "ever victorious army" heroic to the death. British experts have always said that Chinese make splendid soldiers under competent, trusted leaders. The military attachés of foreign Powers, trained officers used to war, who saw the Chinese soldiers that were fighting under Tsai Ao and his government opponents, said these Chinese soldiers of to-day are good at war. And I myself saw troops expecting to go into action within an hour against an enemy only a mile away and approaching as cool and ready as if on parade, though they had no ill-will for the enemy, but were merely obeying orders because it was their duty. They have sentiment, too, of the

sterner, lofty type, when conditions demand it. And now the new generation feels that the call has come. Like us, sentiment plays a large part in their national character. It is of a more poetic, tender type than ours.

Americans have too long based their judgment of the Chinese upon the impassive countenance of the patient laundryman. But, have you noticed the singing bird in his window? There is poetry, there are ideals widespread, in a nation where workmen—carpenters, shoemakers, barbers—carry pet singing birds with them to their daily toil, keep them near them to sing at luncheon time, and carry them back at night as carefully as one tends a child. And what care the fathers take of their numerous children!

Chinese gave me numerous new evidences while I was in China of how thoroughly they appreciate the unselfishness of American interest in Chinese matters. The men who are directing the affairs of the Chinese Republic frequently surprised me by the sheer enthusiasm with which they recapitulated incidents in our common history where we lifted our hand to help China. Because of previous experiences in former visits to China I expected much along these lines. It was a genuine pleasure to find that I had underestimated instead of overestimated Chinese gratitude. Still, there was a note of disappointment which the facts compelled me to share with them.

The wonderful mission of Burlingame, the heroic devotion of Ward, the great heart and prophetic mind of Hay, the timely interposition in preservation of the "Open Door," the justice and moderation of our course during the Boxer crisis and our generous remission of the indemnity surplus, the education and inspiration of China's young men and women, the individual and collective sacrifices, the noble example and omnipresent activity of American missionaries, the schools and hospitals and clinics sustained by millions of American contributors (in many cases themselves but poorly supplied with this world's goods) the Y. M. C. A., developing healthy minds in robust bodies; Yale, Princeton, and the

Red Cross projects—these were dwelt upon with sincere, quiet enthusiasm. And then came "the reverse of the medallion."

WHERE AMERICA HAS DISAPPOINTED

It may be momentous for us and for China, this less pleasant fact which ever obtruded itself. And as it must become a part of essential American history the truth should be made known while there is yet time for remedial action. Also, it is to be noted that in what was said to me by Chinese in varying walks of life there was little suggestion, scarcely a syllable, betraying resentment. The one dominant note was disappointment—mystified, dumfounded disappointment; poignant disappointment in us, for us, for China.

"You have done so much for China," was in substance the burden of their appeal, "you have been so unselfish in your regard for us that naturally we began to look to you, more and more, particularly now, when we have at last succeeded in putting into operation in our country the principles of political life which you have utilized with such excellent success. Now, what we cannot understand is that you should seem to hold aloof from us at the very moment when, it seems to us, we are proving ourselves most deserving of your sympathy and support.

"We want you to share with us the profits of developing China, because we know we can trust you, *absolutely*. It seems to us a fair proposition on both sides. We have the country, the resources, the people needing development. You have that which we lack—capital. We are ready to reorganize from top to bottom. We *must* reorganize. If you help us we know that all will be well. If you don't help us, why, we must take our chance and do the best that we can, under the circumstances. Your bankers are sending millions to Europe every week—not a cent to China. We are ready to offer as good terms as they offer and there is no question as to the security. Why do you hold back?"

The answer to this question concerns the most vital interests of every American, rich and poor alike. It concerns the laborer on the farm and the farmer who owns the

farm; it concerns the weaver and the minder in the mill and the man who owns the mill; it concerns the mechanic at his lathe, the superintendent at his desk, the clerk, the banker, the youth or girl behind the ribbon counter, the widow and orphan to whom hard times and a possible panic may mean penury or worse. It vitally concerns our national honor, as to which much has recently been said.

Why should we hold back, now?

Providence gave us a large share of one side of the Pacific. The same Providence gave to China a large share of the other side of the Pacific. Destiny has drawn our political paths along parallel lines. Shall we, by act or by omission, defeat China's expressed purpose, obstruct our own destiny, divert those lines from their parallel course? Should we, because of some unworthy motive—some reason so utterly contemptible that it shuns the light—hesitate to pick up a golden prize which is ours because it is China's will to give it to us?

WE MUST HELP FINANCE CHINA

Thomas Jefferson did not hesitate when the Louisiana Purchase became possible. He seized the opportunity boldly, we crossed the Mississippi, conquered the wilderness, the "Stony" mountains of pioneer times, the desert and the prairie. Thus came the winning of our West. To-day, China pleads to us to carry our energy and the energizing wealth we have won across the Pacific, not for territory but assuredly for trade. We need this trade. We can have it. And we can have far more and far better. The shaping of the political future of China will largely determine the history of the world. Is it to be molded on republican ideals by the free will of a people glad to accept the suggestions of friends, or is it to be crushed into a mold fitted for it by taskmasters trained as militarists, whose aim is exploitation and whose political ideal is submissive obedience to authority? The glory of a nation's strength is that it gives influence to its moral ideals without the use of force, since it is known that it can and will enforce the rights of its citizens at home and abroad, thus caring also for

the rights of its friends with whom it deals. Is our own will—or lack of will—to stand between us and self-evident advantage? Is it to prevent us from doing our duty to civilization?

I returned from China firmly convinced that China's foreign policy will necessarily be shaped by the attitude of the American people upon these matters. We have been hesitant and laggard where we should have been strong, energetic, and enterprising. It is little wonder that the Chinese have been mystified by our conduct. They cannot understand us. Can we understand ourselves?

The Chinese President is a man of large democratic leanings and sympathies. Day by day, he is knitting China closer and closer together. He is surrounded by able, honest, patriotic Chinese, men like Premier Tuan Chi-jui and the Minister of Finance, Dr. Chen Chin-tao, scholastically an American product. These men are republicans in every sense of the term. They have dared much to secure for their country a rebirth under the republican constitution. China's roll of honor is rich with the names of other courageous, progressive patriots. Yet, their task is a hard one. Our weakness and vacillation has made it much harder than it might have been.

LOST OPPORTUNITIES

Many opportunities have slipped through our fingers. At one time a loan of three millions of dollars advanced on unquestionable security would have enabled the Government banks to maintain specie payments. No loan came from friends. They dared not accept advances from those whose proffered terms meant future financial subjection. They went to a paper basis, at a loss now of untold millions. Are we to blame? Was it ignorance of conditions, or short-sighted reluctance to sacrifice a little present gain that we might serve a much greater future? Or was it merely cowardly fear of a possible disagreeable international dispute of which we could not see the exact outcome? But any well-informed man could not but know that as only right action was involved there was no

cause for timidity. All right-seeing men of every nation would have approved.

That chance has gone; others, too, have been lost. If we are to redeem ourselves, we shall have to act swiftly. The sands of our opportunity are rapidly running out of the glass of time.

Old ways long-cherished hopes die hard. Those who are familiar with Chinese history from the abortive embassy of Lord Amherst to the fall of the Manchus, particularly, as told in the interesting writings of Dr. Morrison and Mr. Putnam Weale, will recall the curious diplomatic croquet which was summed up in "The Battle of the Legations." It was not always but it was sometimes a "sham battle," with China a helpless ball knocked alternately through this or the other Manchu "wicket." China under the Chinese has developed a new school of diplomats, a modern method of diplomacy. Her cards are laid on the table. She wants peace. She wants progress. She wants to play her part in the peaceful development of the Pacific trade routes. She is ready and willing to uphold her end of the contract. Are we willing to uphold our end?

China enters upon her new era, I am satisfied, with friendship for all nations, with malice toward none—absolutely not one. Facts which have come within my knowledge have assured me that most of the pressing problems of the Pacific will be well on the way toward solution the moment when we make it clear to all whom it may concern that we intend, as a self-governing nation, to play our natural part as the practical friend of a self-governing China, with no aggression either in spirit or in deed, but with a firm, if need be a stern, insistence upon our rights and in consequence upon China's rights, so far as ours are involved. Indeed, there is no doubt in my mind that we have only to declare this, our just and fair purpose, with confidence and with courage in order to be heard with respect and with approval. No nation will object to such a policy, though at first some might suspect our intentions. Our hesitation invites trouble. Weakness may involve not merely dishonor but disaster.

STAVING OFF OLD AGE

A LONG YOUTH AND A VIGOROUS AUTUMN OF LIFE PRACTICAL FOR EVERYBODY

BY

HAWTHORNE DANIEL

TO MAKE sure that this series of articles shall be authoritative, the **WORLD'S WORK** has arranged to have them reviewed and approved by the Life Extension Institute before they are published.

The Life Extension Institute was organized by well known scientists, publicists, and business men as a semi-philanthropic enterprise to disseminate the knowledge of healthful living among the people. Ex-President Taft is president of the Board of Directors, and its professional advisers include some of America's most distinguished physicians and surgeons, as well as the most prominent educators. The Institute's approval of these articles, therefore, assures their scientific character.

IN AN address delivered before the National Conference of Charities and Correction in Indianapolis, Dr. Eugene L. Fisk, of the Life Extension Institute, made the following statement:

"Time is a mere mathematical abstraction, a synthesis of space and motion. It can no more kill a man than can the Rule of Three. Man is not chased to the grave by an absurd old man with a scythe and an hour glass, but by myriads of microscopic enemies, by streptococci, largely, and by spirochetes and pneumococci, and others of that ilk.

"It is the activity of certain lethal agencies that brings on old age and death, and in so far as we can put in motion other activities to meet and neutralize them, in so far shall we hold back the 'wings of time' . . . or, to use language derived from ordinary scientific observation, protect the cells of our bodies from injury or strain, from poison (whether formed internally or externally), from starvation, from bacterial attack. That is all there is to the 'wings of time.'"

It is admitted, of course, that science will probably not be able, in the immediate future, to learn the steps necessary to the complete protection of all the cells of the body. But as the last thirty years have brought the knowledge of preventable diseases, and with that the ability to master those diseases, so might the next thirty years bring more definite knowledge of bacterial attacks, and possibly the ability to defeat them.

Some diseases are often called the diseases of old age. The remark that "a man is as old as his arteries" has attracted considerable attention in the lay mind to the disease called arteriosclerosis, or the hardening of the arteries. As a man grows old his arteries become less soft, less able to stand overexertion.

Sir Clifford Allbutt says that this disease, as it often exists in later life as an alleged expression of the lapse of time, "is inmedicable" or beyond the control of science. That may be true with our present knowledge of bacterial attacks and tissue changes. It is held by a number of scientists, however, that the tissue changes resulting in the hardening of the arteries are due to some preventable action.

"Arteriosclerosis," says Dr. Fisk, "is not a disease, an affliction coming out of the blue or out of the depths; it is a physical change due to some physical or chemical cause or causes. It is our business to seek such cause, and not to blame it on the 'wings of time.'"

The "ductless glands" have been said to control the duration of life, but a growing weight of opinion is being massed against this theory. These glands in themselves are subject to attacks similar to those to which other combinations of cells fall victims, and although it is admitted that they do exert some influence, such influence is dependent upon their own condition, which in turn is subject to change.

But the facts I have cited are at best generalities. It is my purpose to show

what can be done in a practical way to defer old age.

Eugenics is at the beginning. Other things being equal, the man who starts life with the best body stands the best chance of living longest. But from the moment of birth he is subject to external and internal influences that affect his health. These influences are neutralized to some extent by other influences, and the result is that he will live to an age proportional to the amount of the neutralizing influences. But a man does not go through life being affected by certain influences for evil and certain influences for good, always in the same proportion. One day he has business worries, another day physical overexertion, another day an accident, and so on. Some days he plays, but most of the time he forgets about play. More than the average person believes, worry affects the health for evil, and play for good.

FIFTY YEARS OLD AT THIRTY-TWO

An advocate of play as a prevention of old age is Dr. Louis R. Welzmler, physical director of New York's West Side Young Men's Christian Association.

"A man was in here just this morning," he said in answer to my question as to what he did to keep men young, "who is in the 'old man' class, and in years he is young. Let me see," and he looked at a card covered with data concerning the man in question. "He was born in '84. That makes him thirty-two, but he is as old as most men of fifty. With him it is overwork, resulting in 'nerves.' He finds it almost impossible to concentrate. When he starts along a certain line—when he wants to run along a single track, so to speak, he finds that his mind is continually turning switches that put him on to the sidetracks. I am going to make him play. I am going to make him play until he stays on the main line. I'll give him a medicine ball, and teach him to become so interested in that ball that everything else is out of his head."

He stopped for a moment, and looked out on to the busy gymnasium floor.

"Then some other men," he continued, "get into a rut, and can't get out. Instead of being switched on to every side

track by their minds they are kept diligently at work on the main line. You have seen business men who could not forget their business. All the time their business problems are uppermost in their minds. When they come to me I make them play. I get them interested in something else.

"Did you ever see a filter cleaned by reversing the flow of water? The water going in one direction leaves sediment behind it until the filter does not operate as it should. Then, when you reverse the flow, the sediment 'boils' out, and always you are surprised to see how much was there. That's what play does. It reverses the flow, and it takes out of you all the grouchiness and worry."

"ACT YOUNG"

"When I find that I am getting short and crusty in my answers to the boys around here, I go out and play handball. When I come back I feel younger. I believe that a man is as young as he acts. He grows old because he does old things. You must have noticed how the mother of a large family stays young when her husband grows old. I believe the reason is that she plays young games with the children, while he sits with his newspaper and his troubles."

According to Dr. Welzmler a man gets old when he tries too much to protect his muscles from becoming tired. Muscles retain their strength only when they are being used, so when they are coddled they lose the strength they should have, and after a time their rest becomes permanent.

"As a rule," says Dr. Welzmler, "men do not play enough. They ought to try tag and prisoner's base and other boyish games which send the blood tingling through their arteries, and give ginger and zest to life. If men knew that they are really as old as their play indicates, there are a lot of staid fellows who would turn kids again, and give the cop on the corner a merry time of it.

"There are too many men of to-day who prefer to do their hill-climbing by automobile, and who wonder why their breath is so short. The fact is that a lot of them are living on the physical legacies of their ancestors, and keep well because of communal hygiene."

Dr. Welzmillers programme is based largely on the beneficial effects of healthful play. There are other things, however, which must be taken into his plan. The human body is very much like a complicated machine, and all complicated machines require constant attention and occasional adjustment. Regularly they are overhauled. If we could all learn to take the trouble to have an occasional overhauling by experts we would find that it would benefit us. Small adjustments would be made, and by such procedure we would considerably defer the time for our ultimate breakdown.

LEARN THE LAWS OF HYGIENE

It is certainly very evident that we need to be better acquainted with the laws of hygiene. It is seldom that the average person knows when he is committing errors which are detrimental to his health.

Statistics carefully prepared by the Government show that because of the checking of infant mortality our average length of life is now greater than it formerly was, but that our adults die at an earlier age than they used to.

"Death rates have been lowered at every age period in many countries," says Dr. Fisk. "The first line of resistance, that under thirty, has been enormously strengthened, and the slaughter of the innocents under five has been materially checked. But the gain is less at the later ages, and in this country the chronic diseases of degeneration have materially increased. There is reason to believe that the vital resistance among the elderly has been lowered. There is need to take thought of these chronic maladies; to teach our young people to resist them as age advances on them; to see to it that the quality of the race is improved by rational eugenics. This can never be done unless certain national tendencies are curbed and modified.

"The grave question now confronts us as to how far a man should be permitted to disregard his responsibility to his family, to the State, to his God if he acknowledges one, in the poisoning and neglect of his own body.

"It is characteristic of those most active

for personal liberty, most restive under restraint, whether by law or by precept and instruction, that they are the least free of anybody in the population; mostly they are slaves to some unhygienic habit. These are they who, when pain comes, rush to their physicians, insistently demanding relief from the diseases they have been accumulating for perhaps twenty years. The man who grins the widest when others warn him about his alcohol, his tobacco, or his overfeeding is the one who complains the loudest when disease strikes him."

Dr. Fisk points out that "the fundamental fallacy underlying the unhygienic life is the theory that the hygienic life, the healthy life, is one of asceticism, a monotonous, joyless, sterile existence." He calls attention to the fact that the joy of being alive, the "splendid satisfaction" of perfect health, the pleasure experienced by feeling able to 'do things,' are "unknown to the dram drinker, to the glutton, to the victim of bodily neglect."

AVOID EXCESSES OF ALL SORTS

Nothing ages men like excess. Excess in work, excess in play, excess in eating and drinking, in rest, in everything that goes to make up a part of human existence tends to bring on old age. Alcoholism has a tremendous effect, although there are occasional instances of old toppers "who live into the eighties well-nigh poison-proof, like Mithridates of old." It has its effect "not only for the so-called moderate drinker, the man who drinks 'like a gentleman,' but also for the temperate drinker who takes a couple of glasses of beer a day."

"But there is more to the hygienic life than total abstinence," says Dr. Fisk. "There is moderation in eating; there is faithfulness in exercise; there is attention to the choice of foods, and thorough mastication of them; attention to the regulation of work, rest, and play. There is correct posture and deep breathing, and scrupulous care of the teeth and gums and throat, to prevent infection ramifying through the body."

According to statistics compiled by the Life Extension Institute more than 50 per cent. of the workmen employed by the large manufacturers whose employees have

been examined by the Institute are in need of some medical aid, and from 5 per cent. to 8 per cent. are in advanced stages of organic disease and impairment. "Ninety per cent. of such people," says the Institute, "are totally unaware of their needs. They are active and at work, and sometimes they drop dead at their work for lack of some warning as to their condition. Others go on accumulating disease and impairment until they fall by the wayside."

Recently compiled figures show that in the ten years from 1890 to 1900 the death rate from typhoid, tuberculosis, and pneumonia decreased, while the rate of deaths caused by the breaking down of the heart, arteries, kidneys, and the nervous and digestive systems increased greatly. These latter are the diseases of old age. They are reaching down into middle life and below, and increasing there and apparently at all ages.

It is up to us, then, to watch more carefully for such diseases. We have been taught to fear tuberculosis and typhoid and pneumonia, but it seems that these are on the decline. We must watch more carefully for the "old age diseases" that cause the breakdown of the nervous and digestive systems, the heart, the arteries, the liver, and the kidneys.

METCHNIKOFF

No article on old age could be complete without mention of Metchnikoff. This noted naturalized Frenchman spent the last eighteen years of his life on a diet prescribed by himself, after he had arrived at the conclusion that old age is caused, at least in part, by the unchecked ravages of the micro-organisms that live in the digestive system. These, he contended, are taken into the body largely in the food we eat, and flourish there because no others are taken into the system to destroy them. Believing this theory, he ate nothing that was not cooked, in order that the outside micro-organisms should enter in the smallest possible numbers, and in order to counteract the effect of those that managed to survive he drank sour milk, which he said contains organisms capable of fighting

those that are doing the damage. His death occurred at seventy-one, but not from old age. It was due to organic heart trouble, and was expected by him. He had made his students promise that they would dissect his body after death, and they discovered that his organs were much more youthful than is usual in a man of his age.

His teachings are not universally accepted, but that his method is a way of aiding the work of lengthening life is doubted by few. Certain it is that diet has a very great effect on us, and he who chooses his food with regard to the effect it has for good will undoubtedly find the way toward long life considerably smoothed.

RULES FOR A LONG LIFE

There is no panacea that will bring long life to every user. "What is one man's meat is another man's poison." But a few rules are applicable to every one:

Be moderate in everything. Excess in eating, in drinking, in anything tends to bring on old age.

Be faithful in your exercise, and be sure to choose an exercise that is helpful to you.

Stand and sit erect, and use your lungs.

Keep your teeth and gums and throat clean. The mouth is the principal port of entry for undesirable immigrant micro-organisms.

Be careful to maintain the bowel functions. The digestive tract is a favorite abiding place for hordes of marauding bacteria.

Have your body occasionally examined. The physician will take notice of what is wrong, and will advise you accordingly. And let him do the worrying. Fortunately the exact condition of the organs of the body can usually be seen by physicians, even when they are but slightly off normal.

Be happy. Do not worry; do not allow yourself to become a grouch; do not "get mad." Remember that psychologists now contend that you do not clench your hands because you are angry. You are angry because you clench your hands. So do not clench them.

Act happy, and you will become so.

Act young, and you will remain so.

VAGABONDS OF GLORY

ABOARD A CRUISER OF THE FRENCH MEDITERRANEAN FLEET—THE DAY'S WORK OF THE
"WALDECK-ROUSSEAU"

BY

RENÉ MILAN

[These extracts are translated from "*Les Vagabonds de la Gloire*," a book recently published in France. The author, an officer on the French cruiser "*Waldeck-Rousseau*," recounts quite frankly and with a great deal of charm the details of life on board a warship in the Mediterranean. Acknowledgments are due to MM. Plon, Nourrit & Cie., of Paris, for permission to translate these passages.—THE EDITORS.]

A BRUSH IN THE ADRIATIC

ON THE bridge all eyes are alert. Clear sight and cool head, and a peculiar, calm happiness accompany the approach of danger. On the forward deck the men not on duty watch the horizon and the bridge alternately, trying to read on the faces of the officers what adventures may be in store. . . . In the winding harbor of Cattaro we can see masts gliding, as fine as hairs; these are the Austrian destroyers which are on their way out to attack us. The *Waldeck-Rousseau* continues to approach the hostile shore. At last the first of the destroyers appear, gray and trailing great plumes of smoke. The moment has come to prepare for action. The commander orders the bugles to give the signal.

At the first notes, so often heard for mere drill or discipline, the sailors are all alert. They look questioningly toward the bridge, as though asking whether this is the real thing this time. I reassure them with a nod, and a joyful shout bursts from them, like children about to play a long-postponed game. The men hasten to their posts of duty, and now the ship seems deserted.

But under cover all is busy. The watertight doors are closed. In each compartment groups of men are busy with their machinery, giving it a final inspection. They see nothing, nor will they see anything during the battle. In conflict on land, soldiers are able to express their enthusiasm by cries and yells; but sailors have

to observe strict silence. Nothing must be heard but the click of the engines, the telephoned commands, and the tinkle of bells. In the turrets and casemates, the gun crews are in readiness behind their weapons, prepared to execute the rapid, precise, oft-practised movements which will keep the guns supplied with shells.

From the keel to the guns, from the engines to the crow's nest, the silent attention of a thousand men is directed toward the chart room, the brain of the cruiser. In this armored room, overlooking the water, the commander, his two firing officers, and the navigating officer know that the safety of the ship depends upon their cool judgment. In a low voice, as though speaking of unimportant matters, they speak to the sailors who transmit their orders. Leaning over the keyboard which communicates with the batteries, several men are busy with the glasses, bells, and indicators, which tell the gunners their range, angle of aim, and the order to fire. At the three dials which give the orders to the engine room, three marines record the instructions of the navigating officer. At each side of the room, standing close to telephones and speaking tubes, two sailors are in communication with all parts of the ship. A subordinate officer, with hands on the wheel and eyes on the compass, steers the ship as the navigating officer directs. There is no sound except the thin tinkle of a little bell attached to the wheel, which marks each degree to port

or starboard. The four men in command of the ship watch the horizon through slits at the height of their faces, cut through the armor of the chart room like the openings in the visor of a medieval helmet.

Through these embrasures they see the furrow of foam marking a periscope approaching to starboard. The cruiser is moving at full speed. Instantly the whole battery of lighter guns is brought to bear upon the enemy, and the vessel swerves rapidly to the right in the hope of ramming the submarine. Almost at the same instant an airplane appears in the mist to the south, descends toward us in a spiral, and tries to pass above us to drop bombs. Our machine guns are immediately trained on this aerial enemy and their rapid explosions fill the air. As soon as the advancing destroyers come within range our heavy metal begins firing in regular salvos. The cruiser is enveloped in smoke as we front this triple assault. Every man works as precisely as a watch. It is impossible to enumerate all the details of these exhilarating and delicious moments!

Just above us, three hundred meters up, the aviator releases his bombs. Their fall sounds like the tearing of a strip of metal. But the cruiser's swerve to the right destroys the accuracy of their aim: they burst close to the hull, at bow and stern, with a roar which drowns for the instant the voice of our guns: their fragments whistle above the deck and the gun turrets, and at the point of explosion the sea boils as though swept by a hail of pebbles. The aviator then rises again, followed by our

quick firers, which soon abandon the chase.

Despite our quick swerve to starboard the distance was too short and we missed the submarine, though only by a few yards. In the meantime it disappeared under water. The sailors in the bowels of the ship hear a long shudder of seething water pass along the ship's flank; they even claim to have felt the shock of something which raked along the hull without penetrating. Undoubtedly the submersible fired one or perhaps several torpedoes at us, but the quick change of the cruiser's course saved us: the weapon, instead of striking us full, simply slid along the side and passed off.

To see if we had been hit, and to aim anew, the submarine emerged once more: the force of its upward motion brings its periscope and conning tower into plain sight, and at once our smaller guns are in play again. The water boils around it, and the bursting shells envelop it with yellowish smoke. Is she hit? Is she sunk? One never knows the fate of these adversaries, as whether they win or lose they pass out of sight beneath the waves. The cruiser's course carries her on, and we see no more of the submarine.

The big guns are still speaking to the Austrian destroyers, who are surrounded, at a great distance, by our falling projectiles. But they are zigzagging at high speed, and our own movement of eleven meters a second makes accuracy of fire difficult. The enemy's prudence triumphs over his audacity. Seeing that our fire will not permit them to come within torpedo range, they make a wide turn and retreat.

INSPECTING NEUTRAL PASSENGER SHIPS

ABOVE the horizon appear the masts, funnels, and hull of a steamer. Whether her conscience be uneasy or tranquil, she knows she cannot elude our greater speed, and makes no attempt to escape. At 15,000 meters her outline will show whether she is passenger or cargo ship; at 10,000 meters her height above the water will tell whether she is loaded or empty; at 5,000 her flag betrays her nationality. English or French, she may pass. If neutral, we

show the international code signal, "Stop at once!"

She has to obey. If she continues on her course a blank shot warns her not to play with fire. If she pretends not to notice the summons, a shell across her bows will warn her we are not joking. And if her screw still turns, a couple of shots fired closer still will assure her that the matter grows serious . . . she always stops in time.

The cruiser halts, too, opposite her.

One of our boats is dropped, her crew seize their oars, and an officer with sabre and revolver, and carrying a big registry book, leaps into her, accompanied by a sailor. If there happens to be a wind and a choppy sea, the boat leaps, plunges, and rolls; the seven oarsmen pull desperately at their task, and the brief passage seems endless. The tops of waves douché crew and officer, and in a few minutes they are drenched.

The boat comes under the steamer's side, where a rope ladder is hanging—sometimes only a knotted cord. Why is it always too short? With arms stretched out, embarrassed by sword and book, swaddled in a greatcoat which was not cut for climbing, the officer tries to seize the ladder. But the swell tosses the skiff about. When she leans toward the steamer's side, the ladder dangles two meters above; and when it is within reach the boat darts away. It is like a skittish horse refusing to be mounted. Passengers and crew of the steamer look down and smile maliciously at these gymnastics. The officer rages. He puts his sword in his teeth, slips the register between his coat and his shirt, waits for an opportunity—then leaps desperately and grabs the ladder. For some seconds he performs on a flying trapeze, while a wave amuses itself by swashing up to his knees, waist, or even his chest; then with a vigorous effort he scrambles up the rungs, holding tight to the slippery ropes, throws a leg over the bulwark, and gains the deck.

It would be superhuman to expect merchant captains to be pleased by these visits at sea. We delay them, annoy them, sometimes turn them out of their course. Generally they are sour enough, and, indeed, we are suspicious when they are too cordial. The naval officer readjusts his disordered uniform, stifles his ill humor, takes on an impassive air, and salutes.

"Captain, kindly show me your papers."

He pronounces this formula in English, Spanish, Italian, or French as the case requires. Grammar often suffers, but everybody is not polyglot! If the visiting officer exhausts all his vocabulary without any one understanding, he falls back upon gestures, strengthened by a glance toward his revolver. This brings light to the most stubborn intelligence. A little pro-

cession forms: the captain, blustering a little, the officer severe, the mate obsequious, then the attendant sailor following in file. By passages and stairways these four gain the pilot house, where the ship's papers are kept. On luxurious passenger steamers sometimes they have been placed in readiness in the first-class saloon, on a table with cigarettes and liquors. Such courtesy arouses added distrust!

As the little group passes along the deck, the passengers press forward in solid lines. This adventure breaks the monotony of the voyage very pleasantly, and gives their peaceful souls a tingle of the Great War. Each one feels himself a bit of a hero and is preparing stories for future audiences. The men watch the face of the French officer, but find little to read on that professional mask. The women, more daring, try to win a glance from him, try to catch his attention. *Vive la France!* cries one. "A real pistol!" says another, with a shiver. "Oh, officer, do stop and let me take a snapshot," begs a third.

The officer replies not a word, and hurries on his mission. In his big register he consults the correct forms of all the documents he has to verify; text, seals, and stamps are exactly reproduced there, and not a single word in the ship's papers must differ from the originals. If the papers are Arabic, Norwegian, or Japanese, the officer's pencil makes its comparison line by line.

The vessel's papers seem in order; her name, nationality, and past reveal nothing dubious. The captain is questioned. Whence does he come? Whither bound? And at what ports has he stopped? What are the instructions of his owners? Each of his replies can be checked by the chart, by the ship's log, and by the official stamps upon his manifests. Any delay or inaccuracy in his answers exacts rigorous explanations. In these times movements at sea must be beyond suspicion, and the least peccadillo arouses distrust. Coming to his captain's aid, the mate bubbles over with cordiality, uncorks a bottle of champagne, and offers the fuming glass as answer to an incisive question. The officer courteously declines the offer.

The mate is catechized in his turn. He unfolds and explains the lists of cargo,

drawn up in all languages, full of unknown abbreviations, of archaic weights and measures, obscured by technical trade terms. Every line has its puzzle, and twenty special dictionaries would not clear up all the difficulties. Like an archeologist leaning over some historic inscription, the officer examines, considers, and attempts to decipher these maddening hieroglyphics. By means of a list kept up to date on all warships he checks off the names of ship-pers and consignees who are favorable to the enemy, and makes sure that their names do not appear on the bills of lading.

Each item of merchandise involves some problem. Some goods are always free to pass, others only under conditions, and some are contraband and subject to capture. The texts of The Hague and London Conventions are supposed to resolve all these difficulties. The officer consults them, in desperate search of inspiration. But these documents, drawn up in time of peace for the confusion of sailors at war, are full of equivocal paragraphs in which neutrals are ready to take refuge. How many knotty enigmas of international law have naval officers had to solve in a few minutes!

According to one paragraph, the case seems clear; but a contradictory note puts the whole matter in doubt again. There are no precedents and no jurisprudence to consult. On our decision rests a fraction of our country's dignity: too much generosity may mean precious resources added to the strength of the enemy; too much rigor will result in vehement protests from injured neutrals. If our Solomon's decree leaves open one loophole for dispute, a throng of judges, sitting in the prize court, will argue over it for weeks and months: they will exhaust long vigils and mountains of foolscap to discover what one sentence should have been—the decision we made while our salt-spattered rowboat tossed about at the side of the steamer. And later on official proclamations will thunder against the luckless officer the circumstantial disavowal of the arm-chair jurisconsults.

Well, we can only do our best! Our conscience is clear, our intentions are honest, and no remorse accompanies our verdicts. Common sense must dictate em-

bargo or absolution as the case may be. The smiles and grimaces of the mate will not sway our judgment, and even if the captain at a critical moment insistently offers us a whole box of mild Havanas, this seduction does not add a grain to the scales. The officer refuses politely, finishes his examination, makes his decision, and then asks to see the passenger list.

"Captain, kindly call on deck every one on board. Let each one have his passport ready. I shall hold inspection in five minutes."

Matrons and stewards scatter to the various cabins and a hubbub rises. With exclamations, murmurs of annoyance, or laughter, feverish fingers rummage in bags and portmanteaux. The ladies hasten to adjust their hair, powder their faces, and hastily run over the details of their toilet. They are enormously tickled: it is as good as a theatre! For very little they would put on their best dress . . . but the officer is in a hurry to be off. The captain is making excuses: one passenger cannot lay hands on his passport . . . it must be in his trunk in the hold. Oh, yes! we know that story! It looks like some German spy—

At last they are all ready, drawn up in two rows. Irresistibly an order springs to the officer's lips—"By the right . . . Dress!—Attention!" But no, these are passengers, not marines. Moreover, how could the line be dressed with this stout lady in a skirt too short for her standing between an asthmatic boy and a thin American? The lines shuffle and sway, a child is heard crying somewhere, two Brazilian or Argentine girls are hysterical with laughter, a Negro is trembling with fright. The officer begins his inspection.

Like a row of blind beggars asking alms, each holds out his hand with his passport. The men are very serious, even indignant; they mutter something about invoking the aid of their consul or ambassador, and the sacred rights of neutrals. The officer, unmoved, gives them an all-seeing glance and runs over their papers with careful finger. Stamps and seals are correct, signatures, too. But no touchstone is so valuable as the tongue: a few words tell many a secret to an expert ear, and a breath of hesitation

will betray in many instances where parchments have absolved.

"Kindly tell me where you come from. Your name and date of birth? When did you leave your country? Please reply in your own tongue. What is your profession?"

These questions must be made point-blank, in varied ways, and the dialogues need not be prolonged. Never any discussion—an instantaneous decision, and one passes to the next.

Click, click! Right and left cameras are busy. How many albums there will be where passengers have preserved their naval inspection! They imagine that you don't see them, but their faces, suddenly grown serious, and an elaborately innocent air always betray them.

"And you, mademoiselle! There seems to be a great many visés on your passport! Where are you going?"

"I am from Valparaiso, and am on the way to my family in Moscow."

Great heavens! what are all these women doing gadding about the huge world? Half the men of Europe have thrown themselves upon the other half, but women are still fluttering about like pigeons, heedless of the storm.

Happy indeed if they know their own nationality! I had never suspected that one's fatherland could be set aside, lost, and found like a pair of gloves! But the war, conventions, and revolts have so mixed up the map of the Orient that it seems as though every one had two or three nationalities in case of need.

"It's very simple, officer: my husband was an Armenian, a Turkish subject. At the time of the massacres he fled to the Caucasus and became a Russian. Then his business took him to Crete, which became Greek while he lived there. I was born in Macedonia, a Turkish subject, but the last war made me a Serb. We are on our way to Alexandria because it will be more peaceful there, and as the English are overlords of Egypt we intend. . . ."

So it goes. Adventuresses, spies, or playthings of fate, their explanations are as picturesque as their papers. It would be ridiculous to torment them in the labyrinth where they are wandering!

The fish we are after are readily recognized, after all: Germanic faces, guttural accents, false or honeyed answers, stammered explanations. It is no use to change their names or their handwriting, the Teuton sweats at every pore. They are on their way to raise revolt in Egypt or Tripoli; to work in the Balkans, to pursue in India or China one of their secret schemes. Invariably their passports originate from Switzerland or Holland, but their nationality, like a counterfeit coin, is all too new and shiny. Suspected! The officer goes down to their cabin. Everything that he finds in valises or portmanteaux denotes innocence and sincerity. But a strange odor nauseates him. No need to define it: whoever has known it recognizes without error the kind of flesh that gives rise to it. With handkerchief at his nose the officer turns over the berth or rummages in the fittings of the stateroom. Under the mattress, behind the washstand, in the folds of a bedspread the tell-tale papers are sure to hide—an enemy!

Then one must bring the affair to an end with French elegance and decision. Invested with discretionary powers on a neutral vessel, the visiting officer must still observe courtesies which would satisfy the most fastidious. His attitude, his tone of voice, his words, must affirm, in surroundings which may be wholly hostile, the sovereign will of his country. The officers, passengers, and crew of the steamer form an audience of sarcastic witnesses who would report the slightest crudeness in all four corners of the world. And we have no desire to imitate the blunders of our adversaries.

The visiting officer halts in front of the German, calls him by name, lays a light finger on his sleeve or shoulder, and says in a low voice:

"You are a prisoner. Kindly follow my sailor who will take your baggage and lead you to the boat."

Cries, outbursts of anger, and insults do not move him. What is said is said. But if the scene becomes painful the officer turns to the captain.

"Captain, I ask you to use your power to oblige this gentleman to follow me. If not, I shall be compelled to use force. I

will shoulder responsibility for the warrant which I will give you."

That is sufficient. Shielded as regards his employers and his government, the captain abandons the prisoner to his fate and orders the delivery of his baggage. Enraged, the German protests, but the sailor seizes him and marches him to the boat. The onlookers comment, and the cameras click more busily than ever. Some hands applaud, some murmur objections. The crowd opens with deference before the officer, who makes his entry in the ship's records, releasing her captain from responsibility, and signs the deposition which will pass into official hands.

Then, and then only, everything concluded properly, perhaps he will accept a

cigarette, a bundle of papers, or a cup of coffee. While the prisoner's luggage is being dumped into the boat the officer takes a few paces on deck. The crowd of passengers surround his now humane person, begging news. He repeats the latest radios from Poldhu or from the Eiffel Tower, without comment. Ladies of all nations and of varying degrees of beauty slip pen, album, or postal cards into his hand. He refuses, and they implore him to yield. Weakly, he signs and dates the cards and pages. They promise him photographs (which he will never receive). Secret scissors snip a button off his coat, to be mounted on a hatpin! He is invited to visit in Ukraine, in California, in Buenos Aires—after the war.

THE DEATH OF A COMRADE

THE twilight is delicious as I come on to the bridge: gray and cool.

"Anything new?" I say to the officer of the watch.

"Nothing."

"Any interesting radios?"

"Not one! Eiffel, Norddeich, and Poldhu spoke. The cruisers have nothing to say. Read the book."

I turn over the book in which the wireless messages are noted down. With a glance I run over the hundred or so messages of the day. The usual thing: "Left Navarino, 2 o'clock," says one. "Expect to finish my coal to-night," says another. "Proceeding to Bizerta," a third, and so on for four pages.

"Well," says the officer on watch, "you see, there's nothing interesting."

"It's queer: the *Gambetta* hasn't spoken to-day."

"Probably had nothing to say."

"She should have signalled her daily position."

"Didn't want to use her wireless."

"Perhaps—but she hasn't spoken since nine last night."

"Did any of the cruisers call her?"

"Yes, and she didn't answer."

"Sure?"

"Look for yourself. I'll watch in your place."

Five minutes later my comrade returns, having carefully gone through the four pages of radiograms.

"You're right," he says. "It's deuced queer—anyway, nothing can have gone wrong. There would always have been time to signal 'S. O. S.' That doesn't take two seconds."

"True. But she should have replied to the ships that called her."

"She was wrong, certainly. We'll hear to-morrow."

I go down for dinner. Under my chair, Jimmino (my pet dog), lying like a sphinx, waits for tid-bits. Our gathering is not very exciting. Another day gone, they say, and the doctor cracks his well-worn jokes. Conversation turns languidly on the Turkish campaign. Why aren't we doing more in that quarter? The officers who are going on watch leave to put on warmer garments for the night; their exit is accompanied by the usual pleasantries:

"Good luck, old chap!"

"Keep your eye open!"

"Don't sit up late!"

"You know I'm going to take the express for Paris to-night."

"If you see a submarine, try not to wake me up!"

"And let me know," I added, "if there's any radio from the *Gambetta*." . . . "Why?"

"She hasn't spoken for nearly twenty-four hours."

"The deuce!" murmured everybody. "What can have happened to her?"

The tables settle themselves for dominoes, chess, or bridge; the smokers light their pipes; some unfold newspapers; others are stretched on the cushions. Various suggestions are offered to account for the *Gambetta's* silence.

"Wireless out of order?"

"She had no news to report——"

"She ought to have reported her position for the day——"

"Surely she should have answered when she was spoken to." . . . "We'll hear to-morrow."

The maps are spread out, dominoes click, papers crackle, and the pipes are busy. Every one is silent, absorbed in play, reading, or thought . . . but it is only a pretense. Yesterday afternoon we talked with the *Gambetta*: last night she took the station where we were to have gone. For twenty-four hours she has said nothing. On the maps, in the papers, and the pipe smoke every one reads these disquieting phrases, but no one speaks. I am going to turn in, for I go on duty again at midnight.

Jimmino trots behind me, lies down by my pillow, and drops into dreamless sleep. But I lay awake, waiting for news from the *Gambetta* . . . all my comrades tell me that they, too, had a bad night.

In the darkness I go up to take the watch. My predecessor resigns in my favor with the customary words. I interrupt——

"The *Gambetta*?"

"Nothing."

"What do you think?"

"Nothing."

"Do you believe——"

I cannot finish the question, nor does he reply, but disappears in the darkness.

I strain my eyes upon the sea that never tells its secrets. Anguish, with iron fingers, tightens around my heart. There can be no more doubt, death has met one of our sisters. Every hour that passes proves the extent of the disaster, and if no news ever comes it will mean that eight hundred men were plunged into the abyss at one blow. Leaning against the rail my fingers caress

the steel, canvas, and wood beneath my hands: I feel the splendid cruiser quiver, so full of life and motion. I understand how much I love her, and it seems as though, endeavoring to pierce the darkness, my eyes are eager as those of a father who scans the face of a child whom death has threatened.

A little later our wireless operator sends me a bundle of radiograms. With nervous fingers the ensign fumbles over the code book to translate the figures into French. Every minute I go and look over his shoulder to read the messages as he transcribes them. Heavens, how long it takes to spell out the tragedy!

It happened last night, during the watch which I thought so beautiful. The moon was full, the sea calm, and I saw nothing. The officers of the watch on the *Gambetta*, like myself, exhausted themselves in a useless vigilance. At the end of their beat they saw the beam of the lighthouse at Santa Maria di Leuca. In the distance the shadows were passing which I would have seen if the *Waldeck-Rousseau* had cruised in the sector originally intended for her. These shadows were those of ships keeping close to the Italian shore.

But another shadow, waiting under the water, had been on the watch for several days. It knew that we were returning to the canal of Otranto; informed by spies, it was ready, awaiting the chance to strike a deadly blow. For four nights the great cruisers passed too far off for the submarine to reach them. But last night—the very night when I was on the bridge enjoying the glory of the moon—the submarine saw a cruiser approaching slowly. In the mirror of the periscope the Austrian commander saw the moon-blanced circle of sea, the dazzling sheen of the water, all the spectres that walk the waves at night . . . and then, in the mirror, two masts and four funnels crept into view. It seemed like a phantom. Motionless, the enemy watched to see if the vision would approach, or would vanish as on preceding nights. It came steadily on. With moist hands and tightened lips the man gave his orders. Twenty-five others waited for his word, the destroying angel. At the fatal moment he gave it—*Fire!*

AN AMERICAN AMBULANCIER AT VERDUN

BY

W. KERR RAINSFORD

[The following is taken from the diary of Mr. W. Kerr Rainsford, a Harvard graduate, one of the many young Americans who have served France as "Ambulanciers" on the western front. Mr. Rainsford spent seven months in this work, his duties taking him to the battlegrounds in Alsace, in Lorraine, and finally, in June, to Verdun. These extracts from his diary take up the narrative from the time he was ordered to this great battlefield.—THE EDITORS.]

SUNDAY, June 18th. Some of us went in last night to Verdun and on to Bras, learning the roads. As we left Souhesmes the whole west was a sheet of crimson clear to the zenith and in the heart of it a flashing cloud of shrapnel about a Taube. The guns in front were firing slowly; through the blind dust of the highway the varying procession roared by, camions, artillery, staff-cars, and ambulances, crowding and dodging in endless array. We passed through two little villages, at the entrance of which *gendarmes* forced the traffic into single columns—through the dust and falling darkness it was hard to see if they had suffered any damage—then across the narrow-gauge tracks the half-demolished suburb of Glorieux. It is an insignificant collection of modern brick villas and gardens suddenly raised to the dignity of tragedy. We had left the main artery and were traveling now alone and, of course, without lights. The road, swinging in a wide curve, crossed the main tracks on a viaduct with a sudden panorama of the valley. Opposite and very close rose the dark ridge of St. Michel along whose crest the white flashes of the cannon, stabbing the darkness, rippled back and forth like running scales on some Titan keyboard. One's blood sang with the sheer beauty and thrill of it. The next moment we had plunged amid a blackness of trees, through a gate in a moated wall, and into Verdun. In the grayness of night it stretched about us, empty of any

life, wrecked, demolished beyond belief, its lanes of tumbled ruins echoing and reëchoing with the crashing thunder of the guns. It seemed only a moment and then, as we passed through the farther gate, I looked back from the bridge—a tranquil river shaded by trees, a medieval gateway dark against the sky, and the moon just creeping over the ridge. We quickened our pace for Dead Man's Corner, swinging in beside a galloping battery in a hurricane of dust, and drew up in the long street of the Faubourg Pavé. The noise was deafening, but of the dozen or so men standing about the *poste de secours* no one seemed to heed it. In a few moments the first contingent of us started on. I could tell very little of Belleville save a general atmosphere of wreckage and a smell of half-buried decay—our fears of living here were certainly unnecessary. The fire of the guns had slackened; the river battery under whose muzzles we passed was silent; and on the hill by the quarries we could give our attention to noting the position of the larger shell-craters in the road. On the upper plateau, save for the moving soup-kitchens distributing to their throngs of soldiers, the road was unexpectedly clear—of how long it was I could form no idea. Then came a little wood of broken trees and Bras. Two great shell holes like Scylla and Charybdis guarded the entrance, and beyond opened a vista of huddled ruins, formless heaps of débris, and tip-tilted roof-beams; the ground was everywhere plowed and cratered; the reek of

carriage was in the air; and over it all, between the tangled rafters and reflected in the rain-filled shell-holes, the pure-white floating star bombs shone and flickered and died. By an angle of masonry against a sandbag barricade sat some hastily bandaged wounded, awaiting their ambulance, and across the way lay two dead horses in a heap.

Leaving the machine only a moment to be shown the *abri* [bomb-proof shelter] and dressing station in the tunnel vault of a cellar, we started back for the Faubourg Pavé. The fire had quickened again and the road was more crowded. By the quarry hill, seemingly a favorite target, we narrowly missed a train of artillery charging blindly through the dust up the left of the way.

While waiting for the second squad to make its trip I groped my way through the dark corridor of a house to the rear gardens, where already I was clear of the town. Above me rose the Côte de St. Michel, its crest seeming to be on fire with the fury of its guns. Somewhere to the right on the low ground a battery of larger pieces was crashing at slow intervals—each discharge felt like a blow against the body and was followed by a sound like tearing silk overhead, mounting and fading into the general inferno. Our river battery had gone into action, and another, beyond a group of buildings in front, threw them into black silhouette with every discharge. The upper air was alive with the sound of their projectiles, whining, whiffling, tearing, and every now and again, growing from the chaos of it all, a crescendo shriek ending in a crash overhead or behind. From time to time red rockets rose from the volleying crest of the ridge, but one could not guess their meaning; always from the darkness came the smell of unburied things—Verdun—will one ever forget it?

June 21st. We moved to-day to Ballycourt, five miles from Verdun, and are camped beside a field hospital there on a long green slope above a marsh. We take over the regular service to-night.

June 22d. Twelve of our men were out last night on the Bras service and struck the edge of a gas attack. H— gave me a

cigarette this morning from the case he had carried, but it reeked so of gas that I couldn't smoke it. The air here was tainted with it all morning, but whether from the patients or from the occasional shell that struck in the woods above I could not tell. The gas patients were terrible, those less affected coughing and choking continuously, but the others were far beyond that. Three of our cars brought them and the wounded in from Verdun, and two of us took the less desperate on to the evacuation camp at Queue de Mala; the others went down the hill on stretchers—uncovered for treatment or with blanketed face for burial. After twelve hours' work and about ten trips apiece we came in for supper, utterly unrecognizable in our masks of dust.

A COLLISION IN THE DARK

About nine o'clock twelve of us drove in to the Faubourg Pavé and on in groups of two to Bras. Though the French fire was much less intense than on my former evening, a good deal was coming the other way and the road was very congested. One of the big guns of the river battery went off, with an almost stupefying effect, directly in my face, and in the echoing blackness which followed my car careened down into one of the shell craters which here and at the entrance to Bras make the road almost impassable. On the out trip, running empty, if one does not strike shipwreck they don't matter, but coming in loaded with badly wounded men they are horrible. On the second trip, with intensely dramatic effect, a violent storm of thunder and lightning merged indistinguishably with the roar of the guns, leaving between the flashes a blind wall of darkness and of rain. On the quarry hill a stream of lightning showed one of our cars directly before me. I stopped short, blowing my whistle, and the next moment we struck. There was an exchange of names in the dark and an investigation of damage, each of us seeming anxious to appear the more courteous and cool. It was M—, who is blind as a bat in daylight without his glasses and whose presence on that road in the storm seems to me true bravery. I backed a few feet down-

hill, and as both cars would crank we concluded they would do. By now it was raining in sheets. At the top of the hill I fouled a large tree-top which the next flash showed me up-ended in the middle of the road—shot down since my last trip—and a quarter of a mile farther on I ran over the legs of a dead horse. In the darkness of Bras, W——'s voice called over for a helping hand, and I found him with a punctured tire in an inextricable tangle of loose barbed wire. I struggled with him for awhile till my car was loaded and others had come to take my place, but the stuff was round and round his rear axle and I was really glad to feel called away. On the third trip they were shelling Bras.

"CONFUSION WORSE CONFOUNDED"

June 23d. The morning was spent in mending cars and changing camp to the Bois de Nixeville, as it was thought that our parked cars might draw fire on the Ballycourt hospital. We got some sleep in the afternoon and started at dusk for Verdun. Rather to our relief the dressing station has been moved from the Faubourg Pavé into the city, avoiding altogether Dead Man's Corner. On the second run to Bras I was stopped at the Croix de Fer, a wayside poste at a cross-lane without building. The place was a struggling confusion of artillery and soup-kitchens, through which the brancardiers were fighting their way to every ambulance, holding to the wheels of those already loaded and demanding room for their wounded. No one was in command. I took on five, some of whom said they had been waiting three days, and I promised to send other cars. The Germans were trying again for the river battery, one éclat singing rather low over my car into the bank of the road. They can't possibly get that battery and I wish we could tell them so. On the third trip, finding only two left at the Croix de Fer, I went on to Bras, which again was under bombardment. As I reported to H—— a shell struck in the ruin behind us, sending a glowing lump of something along the ground to my foot. Another knocked down the last corner of a building across the way. I had left my car chugging in the middle of the

street till their fire moved away from the village, and watched its consumption of gasoline from behind the sandbag barricade. There were no wounded to be had—why, no one knew, save that something had held up the service. As I went out to bring in my car a vague procession appeared up the side lane, a score or so dim figures in gray each pushing a two-wheeled canvas cradle, and I stepped close to ask if they had the wounded.

"THESE ARE THE DEAD"

Non, ceux sont les morts ("No, these are the dead"), answered one. Poor, broken, swaying things in their huddle of bloody rags, how far they seemed from the thrill of martial music! Then I started back to the Croix de Fer, and I was glad to go. As I cranked, the shelling started again in the upper end of the town, and before I cleared Charybdis a large-calibre one sounded behind me somewhere near our poste. I hoped our men had got to the cellar. They followed me down the road, but one cannot hurry, and I heard them behind me among the trees of the little wood. Beyond, in the open country, a series of star bombs shed a brilliant light, with the shadow of my car black on the road in front, and I felt the eyes of the whole German army on my back. A great deal was passing overhead, some of them a strange form of projectile leaving a brief trail of sparks in its wake. The Croix de Fer was again in wild confusion, from which I brought out five wounded, and again the river battery was being shelled. To reach our new poste in the city we cross on a long, wooden bridge too narrow to admit of passing, and here the guard signaled me over, but I met artillery head on in the middle and had to back out the whole way. To my left I heard Dead Man's Corner going off like a bunch of firecrackers, and then at last I reached Verdun. Poor, shell-riddled Verdun! One comes back to its streets of echoing ruins with a feeling of homecoming, of safety, and of relief inexpressible. As I refilled my boiling radiator and changed a clogged spark plug, three large-calibre shells passed overhead into the upper town, but whether rightly or wrongly one feels protected

there—too small in the size of the whole city to be struck.

June 26th. In the afternoon we heard for the first time from camp the whistle and explosion of big shells down the valley—210's I should say—and were timing their interval and speculating where they were landing, when a telephone call came from Ballycourt, under bombardment, for all cars available to evacuate the hospital. We got there to find the place in a seething turmoil of every kind of vehicle and of bandaged men limping about on each other's shoulders, while a new division of troops, marching in to Verdun, were blocking every avenue of egress. In the steep-pitched fifty yards of muddy lane that leads between the hospital sheds three wagons were lying in fragments, their splints and bandages scattered broadcast on the ground, eight horses lay dead or dying, and I heard that six men had just been killed. We made our way to the cemetery, where the wounded were collecting, and, loading to utmost capacity, started back; but as I reached the place where three of the shells seemed to have landed the head of an incoming regiment blocked all possible progress. Why no one held them back or turned them aside I cannot think, save that no one seemed to be in authority or that the man in authority was not there. Minute after minute, crowded together, absolutely stationary, loaded to the gunwales with sick and wounded, we waited for the roadway to clear and for the next shell to strike. Beside my wheels lay a horse still breathing but with both forelegs carried away at the body, and another lacking half its head. When at last the way was open it was found that our procession was headed by horse-drawn wagons which could not travel above a walk, so for three hundred yards to the main road we moved at a snail's pace; but by now the long interval since the last shell had changed from a cause of anxiety to relief, for it seemed probable that the bombardment was over.

I took my load to an evacuation camp at Fleury-sur-Aire—a long ride over smooth, empty roads through a green and cheerful country, where flowers grew in front of the cottages and women were. It was like a

week-end in the country. I got back at seven-thirty and about nine I started for Verdun again in the rain. The night settled very dark and wet, the road was rather crowded, but it was apparently not being anywhere bombarded, and there were few wounded at Bras. Our kindly old divisionaire had placed at our disposal a fine room in the poste at Verdun, and here between trips I was lying down in the corner, when about midnight W—— came in to say that Barber had been hit in the back—he had heard his voice by the roadside beyond the Croix de Fer and had brought him in. We thought then that he was dying. In the large dark-paneled room, lit by two candles on the central table, we sat about listening to the splash of rain in the paved courtyard. A brancardier brought in a canteen of hot tea which we drank as we smoked, and every few minutes some one looked at his watch. A man had been sent to see what was left of the damaged car, and a little later two of us started again to Bras. The rain drove out of a wall of blackness, then the river battery split the night in two, and at the same instant a German shell struck the bank in front. From there on the way seemed to be littered with dead horses and the wreckage of broken carts. At the Croix de Fer, as I dodged between an overturned soup-kitchen and a white horse half across the road, I was stopped by a desperate group of brancardiers and turned about as quickly as I could in the narrow space. In the darkness in front was just visible Barber's derelict. The sound of shrapnel was almost constant overhead, though where it was landing I could not tell. We lifted in three couchés from the roadside, which is all the cars will take, yet the sergeant kept pleading with me to take a fourth. I asked if the man could travel sitting, and he dodged back into the darkness to find out. Then he and another came carrying him in their arms. They lifted him very carefully into the seat beside me, first his feet and then his body, as though they had no relation, and propped him, weak and moaning, against my shoulder. Both legs and one arm were broken. Then the sergeant leaned in to pull an overcoat over the

huddled shoulders, and with a cheery "*Bon voyage!*" stepped back; at the same instant a shell struck the road behind, and through the crash of it I heard him scream, in the flare of it saw him crumple up on the ground. My car lurched over the neck of the white horse and I groped my slow way out. Through the long ride the figure beside me never complained; only from time to time, as he seemed about to fall and I drew him back into the seat, his whispering voice would ask how far there was yet to go. At three I started the rearward work to *Queue de Mala*. Morning comes like the relief from pain.

"A LEANING TOWER OF PISA"

June 28th. This is a strange existence—days of the normal, American cheerfulness of a good set of men in camp, and nights that bear no relation to reality. Yet last night was not bad. On the second run B——'s voice hailed me above the quarry hill asking for a hand. He appeared at my wheel, and though I was conscious of some unwonted shape against the sky I could not see his car, and asked him where it was. He pointed straight upward. It took me a moment to realize that it had climbed a four-foot bank and, plunging head foremost down the vertical ditch beyond, was now resting squarely on its nose, with its long after-body focused on the zenith. It looked exactly like the leaning tower of Pisa. He seemed hurt that I refused to help him lift it out alone, and except that he said his steering gear had been bent I never knew how he got there. The dead horses had not been moved, nor do I think they will be, but the *poste de secours* has been transferred from the Croix de Fer to the Sap de Belfort, and any change of that should be for the better. Farther on I was caught without hope of moving in a block of artillery, supply-wagons, and returning soup-kitchens. There was nothing to do but sit still, and, my intense concentration on the darkness immediately in front being relieved, I became suddenly conscious that in the distance by the Mort-Homme a furious battle was raging. The horizon to the northwest was one continuous line of explosion, and the noise of it was a single

sound. For half an hour I watched it spellbound, till the sudden disappearance of the caisson in front told me that the way was open. At Bras, S—— had apparently gone rather heavily into Charybdis, bending double his radius- and steering-rods, and as I had had enforced practice in that sort of driving we changed cars for the return trip. When I reached Bras for the third time it was getting late, the others were sent back, and I was told to wait as last car—the best trip of the night. When finally I started in with six on board, including our French lieutenant, day was brightening. The Froide Terre loomed up surprisingly close on the left, and the Côte de Poivre behind us. Below to the right lay the river, lined with tall poplars and blanketed in mist. As we passed the Croix de Fer the smallest shell I have ever seen struck the middle of the road in front. By daylight, on an empty road, with full steam ahead, one doesn't do so badly. We took the "S" turn between Barber's car, the white horse and cart, and the overturned soup-kitchen without slackening speed. Barber's machine, having been used as a daylight target, had settled down into a heap of wreckage from which I thought I saw a man's feet projecting, but I didn't stop to make sure, for that whole stretch of road is a place of horror. Then came "the leaning tower" in lonely majesty against the dawn, and looking more like a caricature of a Ford accident than anything real, but seemingly uninjured and capable of rescue the following night. D——'s car had broken down on the edge of Belleville, where he spent upward of an hour bringing it back to life, and resting between his labors his eye was caught by a piece of paper pinned to the doorway beside him. He brought it off as a trophy, for this was its translation:

In view of the intense bombardment now being undergone the gendarme on duty at this point may, if necessary, be found in the cellar of the house three doors to the right.

June 30th. I slept last night, slept twelve hours, and it has made a world of difference. To-day I was able to do some much needed repairing with nails and rope on my car. The constant rain has added

greatly to the difficulties of our living in a single leaking tent—twenty men with room only for twelve cots, and between them a narrow lane of mud and trampled overcoats. We sleep by shifts, but probably the troops in front do not sleep at all.

SHELLED ON THE ROAD

With rumors of fighting at Thiaumont and Fleury, the French ambulance section, which is later to replace us, was lined up beside us at Verdun, doubling the service for the night. The road to Bras was empty. From the top of the quarry hill I heard shelling in front and at the Sap de Belfort found three of our cars drawn up beside the road, but with neither drivers nor brancardiers in sight. Stopping beyond them, I walked back and called softly. There was a moment's silence, then a voice from below: "Come down, for God's sake. They're shelling h—I out of here." Almost with the words came a quick rush of sound and an explosion on the road covered me with mud. I slid down the bank to where a group was gathered in the entrance of an *abri*—a sheet-iron roof built into the slope, with a wooden bench and a steep run of earth steps leading underground to a dimly lit chamber. The shelling moved down the road and ceased—short-range fire, for the whistle and explosion came almost together, and small pieces, but none of them seemed to miss the road. In the lull that followed the other cars moved on to Petit Bras, where some wounded were waiting, and I turned my car about in the narrow way, working the wheels around with my knee. The noise of its motor sounded terribly loud. We were just lifting in the top stretcher when a case of shrapnel burst low over the car with a hiss of bullets beyond. The concussion seemed to drive my head down between my shoulders, one of the Frenchmen let go of the stretcher, which canted far over, and the wounded man cried out feebly. Then we straightened it and shoved it in as a second case exploded a little to one side. I hesitated a moment, uncertain what to do, then went down to the *abri* to see if the other wounded could be hurried up. As I reached the shelter a shell struck almost on the roof, and again

the wounded man called out. The sergeant urged me to go on with him, but I refused to drive nearly empty to Verdun, suggesting instead that we bring him back to cover. The firing had again moved down the road. As we lifted him out a French car drove up and the driver called something I could not understand. I answered that I could handle the wounded there and for him to go on. The words were drowned in the next explosion and he staggered past me down the bank to collapse on his knees against the bench, but almost in the instant started out again in search of his companion driver. We found him, also wounded, in the next sap and, with every one under shelter, sat down a moment to rest. Again the firing moved down the road and ceased, though I could hear it in the direction of Bras. After a lull of several minutes we began reloading, but there seemed an interminable delay about getting up the second stretcher from underground. D—, passing with a load, stopped to ask how I was getting on, and told me that the other two at Petit Bras, having tangled their cars in some loose barbed wire, were sitting in a trench of water while the Germans shelled the woods about them—at Bras they were mostly in the cellar. As we started with the second stretcher up the bank the shelling recommenced, the first explosion covering us with débris, so again we returned with it and waited. Every now and again came the ringing of stones and metal on the iron roof. With the third attempt we succeeded in loading the body of the car just as their fire opened again, and from the seat I called out to ask if there were any assis to take beside me; but the sergeant answered: "Non. Partez, partez!" (No. Go on, go on!) One of my spare plugs had fouled, as it often did, and I limped down the road on three cylinders, keeping just ahead of the following fire.

There were no cars but D—'s at Verdun, everything else being cut off by a small-scale *tir-de-barrage* (curtain of fire), and I was asked to return at once to the sap. I don't hesitate to say that I didn't like going, and as I started back along the empty way I found myself repeating the chorus we had sung those long months ago



BEFORE THE ESTABLISHMENT OF THE AMERICAN AMBULANCE

The wounded transported on the backs of mules from the firing line to the hospital

in Mirecourt: *Hardis les gars! C'est pour la France* (Don't flinch, boys! It is for France). In Belleville I found one of our men with a broken rear wheel and took off his wounded, glad of the chance to return so soon. When finally I did reach the Sap the road was again normal. The number

of dead horses seemed to have increased and one wounded animal, standing broadside across the way, had to be gently shoved aside with the radiator; what else had occurred I could not tell, save that the two ruins near the crest looked smaller.

Back at Verdun in the gray of dawn I



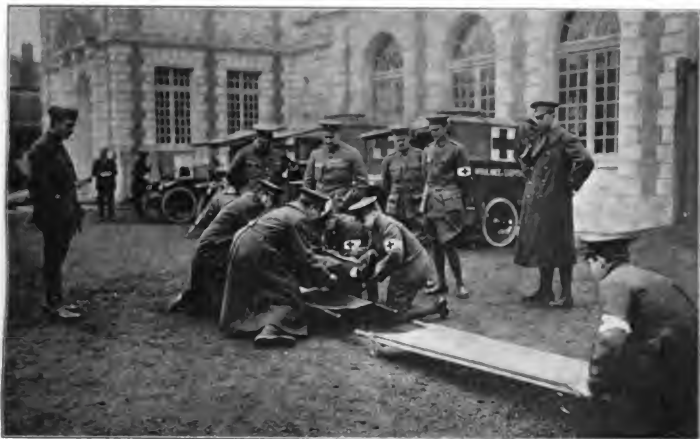
THE AMERICAN AMBULANCE IN THE VOSGES

The American Ambulance is supported by voluntary contributions from the United States, and the drivers of the ambulances are for the most part young Americans who have offered their services for the cause of humanity



THE BASE HOSPITAL AT NEUILLY

The American Ambulance has operated in almost every sector of the battleground in France from Belgium to Alsace-Lorraine



LEARNING TO HANDLE THE WOUNDED

American ambulanciers learning the proper handling of the wounded at a base hospital

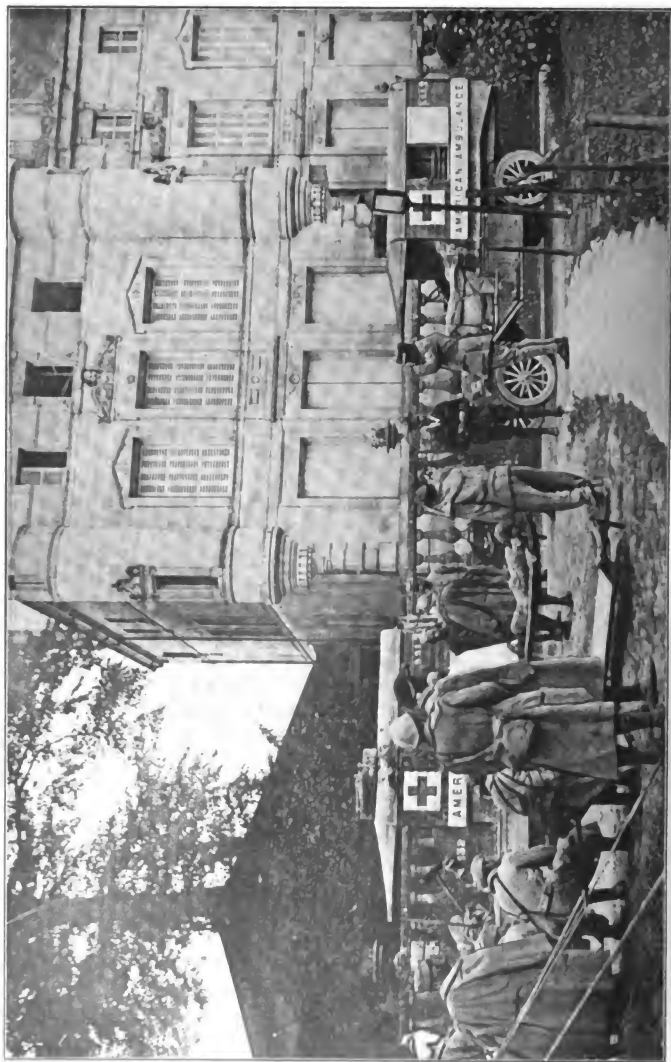
found the old courtyard paved with loaded stretchers, while around the sides and in the dark archways stood a silent, bandaged throng—gray helmets, white masks of bandages, sagging muddy overcoats, bandaged arms projecting from beneath the empty sleeves, and over the whole sodden mass the steadily falling rain. The —th division was giving of its best.

We had only one more night at Bras. As I waited for my last load, sitting on the end of the sandbag wall, I knew that I should not come that way again, and I looked about me to memorize the scene.



WEARING GAS MASKS

The work of the ambulanciers is extremely hazardous. Exposed to shellfire, they often work in the thick of gas attacks and airplane raids



A BASE HOSPITAL BEHIND VERDUN

"At Verdun in the gray of dawn I found the old courtyard paved with loaded stretchers, while around the sides and in the dark archways stood a silent, bandaged throng—gray helmets, white masks of bandages, sagging muddy overcoats . . . and over the whole sodden mass the steadily falling rain"



BEHIND THE LINES

Here for six months two young Americans maintained a repair shop. The drivers of ambulances must prove themselves good mechanics before they are accepted

A pace inside the doorway behind rose the piled débris and wreckage of the house, and above it a weird perspective of broken beams and masonry against the morning



WATCHING A "TAUBE"

"This is a strange existence—days of the normal American cheerfulness of a good set of men in camp and nights that bear no relation to reality"



AWAITING A CALL

Ambulanciers with their cars awaiting a summons by telephone to transport the wounded to the hospital

stars. The French and German fire was crossing high overhead with the steady sound of tearing silk, and for weeks and months that sound would scarcely cease. I wondered if I should ever return to walk in safety up those dark hills of fear. We were leaving to-morrow, and very soon I was leaving France—leaving it with a fading memory of things unreal and with a great gladness that in some slight way I had been able to bring a message of sympathy to her in her time of agony and travail.

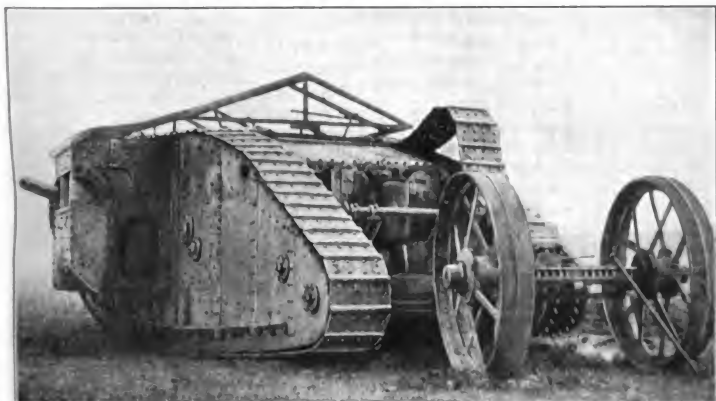


OFF DUTY

When a great battle is in progress the members of the American Ambulance work for several days at a stretch, snatching a moment's rest only at irregular intervals

THE BRITISH "TANK"

Using the American caterpillar tractor as a basis, the British have evolved an armored car that has been used with great success in the advance of the Allies on the Somme



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"TANKS" AND "THE HOSE OF DEATH"

TWO FORMIDABLE WEAPONS OF MODERN WARFARE SUPPLIED TO THE ALLIES BY AMERICAN INGENUITY—THE "TANKS," AN ADAPTATION OF THE AMERICAN CATERPILLAR TRACTOR, AND THE LEWIS MACHINE GUN, INVENTED BY A UNITED STATES ARMY OFFICER

BY

REGINALD T. TOWNSEND

FROM the chrysalis of a peaceful agricultural "caterpillar" farming tractor there has suddenly burst forth a most formidable offensive weapon of warfare, a death-dealing juggernaut that climbs over trenches, crawls in and out of shell craters, and knocks down anything which it may perchance encounter.

American, or to be exact Yankee—for the inventor is a straight New Englander—inventive genius in inventing the caterpillar tractor in connection with British adaptability in improving on this model and encasing the tractors in bullet-proof armor and mounting guns upon them (and the distinction for this idea has also been

claimed by an American although official recognition has been given to Colonel Winston Churchill for the device) has given to the Entente Powers a new weapon of offensive warfare.

And the credit for inventing these machines belongs to Benjamin Holt—the Cyrus McCormick of the Pacific Coast, as he is called—who has done more than any other one man to promote scientific farming throughout the coastal states of the West by his inventions of modern scientific farming machinery.

Back in the 'eighties, "Uncle Ben" Holt, for so he is affectionately termed by all who know him, was making hardwood wheels in New Hampshire—a business

which he had received from his father. His older brother, Charles, had migrated some years before to San Francisco, and to him Benjamin used to ship boatloads of wheels around Cape Horn. But when these wheels were put to use they proved unsatisfactory, for the California air would soon dry the moisture out of them and they

considered to be of value and nothing short of an earthquake could drive him away from that idea until he had determined whether it was feasible or not. Whenever he sets to work upon an idea he refuses to be bothered with anything but the direct object in view, and everything else must be subordinated or left to others. Even



THE SAMSON OF MACHINERY

The caterpillars can pull trees out by the roots (left) and are of great use in clearing land of stumps. They are also largely used for hauling ore (right) or logwood, in forests or on marshy ground where no other style of tractor could be manipulated

would go to pieces easily, so Benjamin determined that the only way to avoid this difficulty lay in using native California wood, and he, too, left New Hampshire for California, where, after a short time, he built a factory at Stockton, leaving his elder brother to manage the finances while he worked out the mechanics of the business. And this latter step, that of leaving the finances to Charles, illustrates one of Uncle Ben's most striking characteristics. Once let him hit upon an idea which he

to-day, well on into the sixties as he is, he invariably when he travels takes a man along with him whose duty it is to buy the tickets, plan the route, and pay the bills, leaving Mr. Holt entirely free to work upon the problem in mind.

And many are the stories told of his fixity of purpose! Some years ago, just having landed in New York on his return from a business trip in Europe, he determined to visit the Bowery. So, one night he set out, but hardly had he gone a block

on that notorious thoroughfare before he was set upon by thugs. Fortunately his assailants became frightened and ran off before they had time to steal his wallet containing his money. After an inauspicious prelude of this sort most men would have foregone a visit to such an inhospitable neighborhood, but Holt proceeded on his way, only to be set upon a second time by robbers who this time made off with his wallet. However, undismayed, Holt found some loose silver in his pocket, sufficient for his needs, and with this continued on his tour when he was



"UNCLE BEN" HOLT

Mr. Benjamin Holt, the inventor of the caterpillar tractor, who has already supplied the Allies with more than a thousand of these machines and is still shipping them to Europe every week

for a third time held up by another band of footpads who this time cleaned him out completely! But it was too late: he had accomplished what he had come for and had seen the Bowery!

On another occasion the employees of his factory planned a great street parade and decided that Uncle Ben should march at the head of it. To preclude the possibility of his leaving town on a motor trip, all the company's automobiles were conveniently put out of order. After many hours of arguing he was persuaded to consent to lead the parade and promised to lay aside his working clothes



THE TREAD OF THE CATERpillARS

Five wheels mounted on each side of the tractor run upon an endless track, fastened to the inside of the tread, which, by means of a belt, is laid in front of the wheels and pulled up after them



THE ALLIES USE THE CATERPILLAR AT SALONIKI

It was only recently that the British conceived the idea of employing the caterpillars as a weapon of offense. Before this the nations at war had used them for hauling their great siege guns and field pieces



CATERPILLARS BEING TESTED BY AMERICAN ARMY OFFICERS

At a series of tests held by the United States Government at Fort Sill, Okla., the caterpillars performed so well that twenty-seven of them were ordered for the new 9th Heavy Field Artillery to be stationed at Hawaii

and get "spruced-up" for the occasion. But when the time came for the procession to form, Uncle Ben could not be found. After a frantic search the committee succeeded in finding him. True to his promise he was dressed in his best clothes, but he had shed his coat and with his hat tilted back over his ears and covered with grease

asked for "Uncle Ben." The latter without any formality whatsoever immediately jumped up and went off with the foreman, leaving the directors and the meeting to take care of itself as best they might. But underneath this rugged manner he carries a heart as large in sympathy as his mind is large in business, as all his neighbors will



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THE LEWIS MACHINE GUN

The invention of a United States Army officer that has proved itself one of the most useful weapons of modern warfare. In this picture, to emphasize the rapid fire of the gun for the camera, the magazine has been filled with paper confetti, which is being ejected at the side

and oil he was busy working on the engine of a new tractor in which he was interested, utterly oblivious to parades or anything else that might be going on.

And his disregard of clothes is on a par with his disregard of conventions, and he is never too busy to listen to any of his employees. Once several of the Eastern directors of his company had traveled clear across the continent to be present at an important meeting, when one of the factory foremen poked his head into the room where the meeting was being held and

testify, but to mention his charity to him is veritably to insult him.

Although from the time he built his factory at Stockton, Calif., Mr. Holt was continually manufacturing new farming machinery, it was not until shortly after the beginning of the twentieth century that he hit upon the scheme of the caterpillar tractor. Now Stockton stands at the head of the San Joaquin River and has a three-foot tide. Consequently a great part of the country thereabouts is so swampy as to render ordinary agricultural implements



MOUNTED ON AN AIRPLANE

The British use the Lewis gun alone on their aircraft. In the air, the wind pressure acts as such a cooling device that the outer casing, ordinarily employed for cooling the gun, is dispensed with

useless, so to overcome this Mr. Holt set about mounting his machines upon great wheels—wheels with a combined tread of thirty-six feet. Naturally these great engines proved too bulky and furthermore required almost an entire field to turn around in, so Holt hit upon the scheme of an endless belt which should have rails mounted on the inside, on which wheels supporting the tractors could run. And so was devised the modern tractor, or caterpillar as it is called. These tractors crawl on two belts, with corrugated surfaces, on either side of the body of the machine. The corrugated surface is on the ground. On the inside of the belts are two lines of steel rails, making four lines in all. These rails are in short sections, jointed, and operate over a cogged mechanism that actually lays them down with their belt attachment as the tractor moves ahead and picks them up again, so that the car runs on its own self-made track continuously.

The body is supported by trucks with five wheels on each side, like small railroad trucks. These wheels never touch the

ground, but run upon the steel rails. In the ordinary tractor about seven feet of belt and rails is on the ground at one time. The treads of these caterpillars are about seven feet long and average more than a foot in width, although for work in soft marshes, such as in the everglades of Florida, where one can impale a



AS AN ANTI-AIRCRAFT GUN

The gun fired from an improvised stand made from a cart-wheel. Lieutenant Robinson used a Lewis gun to bring down a Zeppelin near London last September



THE LEWIS GUN ASSEMBLED

The gun weighs but 26½ pounds, light enough for one man to carry, so that in case of a hasty retreat it need not be abandoned to the enemy, as many heavier types of machine guns must be

pole eight feet into the mud by mere pressure of the hand, treads thirty inches wide are used, and in the big 120 horse-power caterpillars which weigh 26,900 pounds and

are the type employed in the British army the length of the tractor is twenty-three feet. The machine is steered from the treads, each tread being steered separately.



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IN THE TRENCHES IN FRANCE

Where it is used by the Allies as a first-line weapon, the other and heavier machine guns being employed as reserves



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THE LEWIS GUN TAKEN APART

The gun contains but few parts and is so simple in construction that a novice may assemble or take apart the gun in a few minutes, the only tool necessary being a rifle cartridge

The forty-five and the seventy-five horsepower types (the latter used by the French army) have four cylinders, and the 120's have six.

For the first years after they were invented, the caterpillars were used chiefly for agricultural purposes such as hauling plows, threshing machines, loads of hay,



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A MACHINE GUN TRENCH AT SALONIKI

The machine gun is largely fired from small circular trenches, dug at salient points, commanding strategic parts of the battlefield

and soon replaced the horse in this branch throughout the west coastal states.

But it was not long before they were put to other uses. In the South and West they were employed for clearing out irrigation ditches. The great engine (they can surmount a 48 per cent. grade hauling a load) would crawl down into the bottom of the irrigation ditches, scoop up a load of dirt, and clamber up the bank again just as easily as the hippopotamus taking its matutinal bath in the Nile. Up in Alaska as it laid and traveled upon its own rails it was found in many cases to be superior to the logging trains for hauling great logs, and as it could force its way through a five-foot snowbank its value was great. In Africa in many cases the caterpillars replaced the gangs of 100 to 150 husky Negroes hauling timber from the forests, and as it can pull down a tree by a direct pull it was of great value for clearing land of stumps for cultivation. Throughout the Gallipoli campaign and at Saloniki the British are said to have had at least one in use for hauling big guns and ammunition trains.

Indeed, before the outbreak of the war the majority of nations throughout the world possessed one or more of these caterpillars, but their significance—as a weapon of war—was only as a motive power—not discovered until after the war had be-

At the
hostile



FIRED AS A RIFLE

The recoil of the gun is so slight that it can easily be fired from the shoulder like an ordinary rifle

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used them on the Eastern front in the Pripet marshes, and to-day Russia has ordered several exclusively for agricultural purposes, not to be shipped to the front, showing that she is already making plans for agricultural progress when once the war is over. Germany employed whatever caterpillars were in the country and obtained some from captured Belgium at the fall of Antwerp, and no doubt her skilled artisans are turning out many more copied from the American pattern.

But to the British must be given the credit for making them a real weapon of offensive warfare. By building a tractor, the tread of which ran around the length of the car itself, enclosing them in bullet-proof armor, and mounting guns on them, they turned them into veritable land fortresses and launched them against the German trenches. "Heavily armored motor machine guns of a new style" is the official description of the "tanks," although an eye-witness describes them as "toads of a vast size emerging from



COLONEL ISAAC NEWTON LEWIS

The inventor of the gun that bears his name, who, after repeatedly offering his gun free to the United States only to have it rejected, found a ready market for it abroad

the primeval slime in the twilight of the world's dawn." And the effect upon the morale of the enemy was not, indeed, unlike that produced if some prehistoric dinosaur had suddenly appeared upon the battlefield. The great machines crawled in and out of shell craters, crossed trenches, pouring a deadly enfilading fire into them, knocked down remnants of houses that were in the way, and seemed utterly impervious to bombs and shell fire which were hurled against them. With this diabolical engine at the head of column after column of wildly cheering "Tommies" charging madly after it, it is but little wonder that countless "Boches" threw down their arms and hailed the tanks as "Kamerad!"

And the United States authorities have been testing out the merits of the caterpillars. At Fort Sill, in Oklahoma, a series of tests were conducted under the supervision of the Field Artillery Board, under more severe conditions than would probably be encountered in active warfare. These tests were held with the smallest type of caterpillar, the forty-five horsepower one, pulling around a six-pound field piece, and they were so satisfactory that the Government recently placed an order for twenty-seven caterpillars for use in the 9th Heavy Field Artillery, to be stationed in the island of Hawaii.

The tests were held under all possible conditions. The tractor manœuvred through sand, over fields, through streams, up and down railroad embankments, and over a railroad bridge without planking laid over the ties. In one place a tie was missing, but the caterpillar bridged the gap easily and hauled the field piece out of the hole as well. In one instance the gun and the tractor sank up to the hub in a soft, sticky clay, and the caterpillar not only pulled the gun out of the hole but, as one engineer who saw the performance aptly remarked, "pulled the blamed hole out after it," so much mud and clay was there adhering to it. It knocked down a pile of sandbags piled to the height of a man's shoulder and climbed over the debris and wound up the performance by loading itself on a flat car from a runway.

As to the advisability of the substitution of a motor-drawn battery over a horse-

drawn one it was estimated that an annual saving of \$25,000 in clothing, pay, and forage could be effected by such a substitution. To quote from the report of the Field Artillery Board, it was shown that:

1. If the life of the tractor and trucks be taken at five years, probably too short, and the life of the replaced material and animals at ten years, probably too long, the cost of the former would be less.

2. If the saving of forage were spent for fuel and lubricants the battery could travel thirty miles a day for the whole year.

These facts speak for themselves!

THE "HOSE OF DEATH"

And the Allies are indebted to American inventive genius for yet another deadly weapon. "The Hose of Death" and "The Belgian Rattlesnake" are the descriptive titles bestowed by the men in the trenches upon the Lewis machine gun, the invention of Colonel Isaac Newton Lewis, a retired United States Army officer.

"The weapon that is the envy of all Europe" is the way Lord Cecil describes the Lewis machine gun.

"Easily the best machine gun I have ever seen," adds General Leonard Wood, and Lieutenant William Robinson of His Britannic Majesty's air corps, demonstrated his opinion in a more striking manner last September by bringing a giant Zeppelin crashing down over London with well-directed fire from the gun.

But it is in the trenches and on the battlefields of Europe by night and by day that the Lewis machine gun is undergoing the ordeal by fire, and emerging successful, to add new laurels to the genius of American inventors, although the Ordnance Department of the United States Army has steadily refused to adopt the Lewis gun even in the face of expert testimony and despite the fact that each week a thousand of these guns are supplied to the Allies.

The Lewis gun, although by no means perfect—the machine gun as a weapon of war has not yet cut its wisdom teeth—has many advantages. It is light—it weighs but 26½ pounds and can be carried by one man alone easily, it can be quickly loaded in the dark, it is cooled by air and needs no water, it fires, with lightning-like rapidity,

from 200 to 800 shots a minute, and the recoil is so slight that it can be fired from the shoulder like an ordinary rifle. Its light weight makes it peculiarly adapted to uses on airplanes, and it was the first machine gun fired from an airplane—at College Park, Md., in 1912, when it “marked the beginning of a new era in warfare,” as the *Army and Navy Register* put it. The following year a prominent banker of Antwerp chanced to witness a demonstration of the gun fired from an airplane in Belgium and was so impressed with it that within forty-eight hours he had acquired the European rights to make it.

AS AN AIRCRAFT GUN

At present the British use the Lewis gun, to the exclusion of all other makes, on their aircraft, but without the outer aluminum casing, for when the gun is mounted on an airplane the wind pressure acts as such a cooling device that the casing, which radiates the heat engendered by the gases, is done away with, thereby lessening the weight of the gun still further. One hundred and twenty-five of these guns are mounted upon new airplanes each week and dispatched to the battle lines. The Lewis gun is the ideal weapon for a motor-cycle corps—and the motor-cycle is playing a larger part in modern warfare each year. With the machine gun and its operator carried in a side-car the motor-cycle can make quick sorties, or it can be moved quickly from one place to another to reinforce weak spots in a line, while in covering a retreat the machine gun can hold off the enemy while its regiment returns to safety, and at the last moment the operator picks up his gun, climbs into the side-car, and whirls after his regiment to repeat the performance as often as is necessary. This is a field that contains many possibilities that have not yet been worked out.

But even more advantageous than its light weight is the simplicity of the Lewis gun. Including every single stud and the smallest part, it has but sixty-two parts in all. These can hardly be wrongly assembled. For assembling or taking apart the gun, the working parts are much fewer. Three days' instruction at the most should suffice for the novice to understand thoroughly

the working of all parts of the gun. For example, at a demonstration of the gun this summer on the State Rifle Range at Peekskill, N. Y., a trooper who had never seen a machine gun before—much less handled one—took apart and reassembled a Lewis gun in about three minutes, and the only tool that was necessary was the point of a regulation rifle cartridge.

ITS MECHANISM

The gun is air-cooled, having an aluminum jacket with longitudinal fins radially disposed and contained in a steel casing which is extended beyond the barrel, so that each time the gun is fired a vacuum is created which sucks in air through the sector-shaped passage outside the barrel. The gun is gas operated, that is to say, by trapping a portion of the powder gases formed by the explosion a plunger is driven back which operates the automatic mechanism for firing the gun and ejecting the shells. The cartridges are contained in circular rotating steel magazines holding forty-seven rounds each. It is but the work of a moment to change the magazines, simply removing the old one and clamping a new one into place on top of the gun. This ease in changing magazines was especially commented upon by the board of Army officers that conducted severe tests of the Lewis gun at Plattsburg in June, 1916. The board in its report found the following advantages in the gun: (1) Its simplicity; (2) rapidity and ease with which a magazine may be attached or removed; (3) efficient cooling device; (4) ease in cocking the piece (and once cocked the very lightest pressure upon the trigger will let loose a rain of death); (5) ease in reduction of jams (the unjammable machine gun has yet to make its appearance); and (6) satisfactory action in mud and sand and with deformed cartridges.

“THE MAN BEHIND THE GUN”

And the story of “the man behind the gun,” Colonel Lewis, is the story of a doggedness of purpose that in a long career against indecision and indifference would not be downed. Isaac Newton Lewis was born in western Pennsylvania in 1858 and entered the United States Military Acad-

emy on an appointment from Kansas in 1880. Upon graduation from West Point in 1884 he was commissioned in the artillery and for several years followed the narrow routine of Army life, employing his leisure time upon inventions. Among the many successful inventions that he has devised are an automobile submarine torpedo, an automatic cannon sight, and a terrestrial telescope having an unusually large clear field of view. His non-military inventions are the first practical system of lighting railroad cars by means of a self-regulated dynamo carried on the car trucks; the differentially wound dynamo, now in general use; and a method of electric current supply for country houses, using windmills as motive power. While he was but a second lieutenant in the early 'nineties he realized that there was a shortage in range finders and set about to remedy the defect. But this was an expensive field of experiment on the modest pay of a second lieutenant with a family to support, and it was only by pledging his life insurance that he was able to obtain sufficient funds to achieve his purpose. And, as with all his military inventions, far from being encouraged in his efforts, he received only criticism from the Ordnance Board, which rejected his range-finder, only to be forced to buy the finder when the war with Spain broke out and there was a dearth of them.

In 1900 Colonel Nelson A. Miles sent Captain Lewis—he was captain then—abroad to study the ordnance of the European nations, with the result that upon his return he designed a new rapid-fire field gun and mount for field artillery that became the standard and that so altered the tactics of battle that it was necessary to reorganize the Artillery Corps to meet the change his gun had caused.

Called before a Congressional committee—Colonel Lewis is absolutely frank and outspoken at all times—his statements as to conditions in the Ordnance Department aroused (and he knew at the time he made them that they would arouse) such antagonism that he was ordered to an island post near San Francisco. No sooner had he arrived than he designed a new and successful system of harbor defense for San Francisco. But as soon as Washing-

ton learned that he had "bobbed up" serenely in this quarter they "exiled" him to Puget Sound. However, owing to a change of administration, his "term," as he refers to it with a twinkle in his eye, was soon up and he was recalled.

DEVISING THE MACHINE GUN

Colonel Lewis had long pondered over the fact that there was no connecting link between the soldier firing his rifle from the shoulder and laboriously cocking the piece between each shot, allowing virtually but one shot at an enemy—for an enemy target is rarely in view but for the briefest moment possible—and the heavy machine gun which was too ponderous to move about with rapidity and ease.

With the idea of supplying the missing link between the rifle and the field piece, he set about devising a machine gun that should fire with extraordinary quickness and yet be light enough to be transported by one man. The result was the gun that now bears his name.

He at once offered the rights to the Ordnance Department free of charge (as he had offered all his inventions gratis to his country) only to have it refused repeatedly and never given a thorough test, although such men as General Wood and General Funston championed the gun strongly. Finally he became discouraged and asked to be retired from the service so that he might go abroad and find a market for his new invention.

A market was soon found and a company incorporated in Belgium for its manufacture. But after a short time Colonel Lewis found that the Germans were bending every effort, and had succeeded to a considerable degree, in obtaining control of the manufacture of war supplies in Belgium, so he turned to England for a new field. Tests of the gun were held at Bisley in the presence of British Army officers with such satisfactory results that a factory was started eighteen months before the outbreak of the war to manufacture Lewis guns in England. To-day there is another factory in France working overtime to produce the guns, and a firm in Utica, N. Y., manufactures approximately two hundred a week.

HOW SHOULD A DOCTOR BEHAVE?

THE ETHICAL CODE, WRITTEN IN 1803 BY DR. THOMAS PERCIVAL PRIMARILY FOR HIS SON'S USE, WHICH WAS ADOPTED BY THE AMERICAN MEDICAL ASSOCIATION IN 1848 AND WHICH PREVAILED UNTIL RECENTLY AS A DAILY GUIDE TO CONDUCT—A NEW VIEWPOINT ON MANY QUESTIONS SUCH AS THE OBLIGATION OF A DOCTOR TO TELL HIS PATIENT THE TRUTH, THE RESPECTING OF PROFESSIONAL CONFIDENCES, AND MEDICAL PUBLICITY AND ADVERTISING

BY

BURTON J. HENDRICK

[In the last year or two attention has been centred, as never before, upon what is somewhat grandiloquently called "professional ethics." The charges brought against Mr. Louis D. Brandeis, when Mr. Wilson proposed him for the Supreme Court, were that his relations to his clients showed a disregard of the rules that should regulate the every-day conduct of a lawyer. In other words, he had violated "legal ethics." How, then, the public asked, should a lawyer behave? Where do his obligations to the public begin and those to his client end?

Recent events have also raised the same questions regarding the clergy. The Rev. Newell Dwight Hillis, of New York, has found himself entangled in the affairs of a private corporation; the Rev. Charles H. Parkhurst has dabbled in a candy concern whose methods of floating stock have had public criticism. These episodes raise the general question of ministerial ethics.

Most people are not aware that, in 1912, the American Medical Association finally abandoned the "Code of Ethics" which had regulated the conduct of American physicians since 1848, and adopted new "Principles." In this and succeeding articles Mr. Hendrick will discuss the ethics of these three professions and describe the new conceptions of professional and social service that are becoming their dominant note.—THE EDITORS.]

WHAT does the doctor do for you?" Louis the Fourteenth once asked the man whose works have shed the greatest glory on his reign—the dramatist Molière.

"Sire," replied Molière, "we argue together; he prescribes medicine which I never take; therefore I get well."

It seems to have been the fate of the medical profession to arouse the antagonism of literary men. From Montaigne to George Bernard Shaw poets and dramatists have directed many of their bitterest shafts against the doctors. Molière's hatred of physicians was the obsessing passion of his life. Four of his most famous plays expressly ridicule the faculty. His earliest play assailed the doctors; his last, "The Imaginary Invalid," attacked them with even greater virulence. Nor is there anything amiable in his criticism; his attitude is not merely

humorous, it is usually bitter. Thus, one of the characters in "The Imaginary Invalid" refers to a physician who has "an income of 7,000 pounds." "He must have killed a great many men to be as rich as that," is the retort.

In one of his most famous plays, indeed—"The Doctor in Spite of Himself"—Molière's satire assumes more the character of mere fooling. The famous scene in which Sganarelle describes the human anatomy is a case in point. His patient's father catches the pretended physician in what looks like a mistake.

"There is one thing that puzzles me," remarks this impertinent layman. "The side in the human body of the liver and the heart. It seems to me that you place them wrong; that the heart is on the left side and the liver on the right."

"Formerly that was so," replies the physician, "but we doctors have changed all that."

What set all Paris roaring over Molière's comedies was that he actually placed the best-known physicians of his time on the stage. These physicians had their own explanation for Molière's hatred. The great dramatist suffered all his life from tuberculosis, and the failure of the doctors to cure him, it was said, had embittered him against the whole profession. But this explanation is hardly satisfying.

SHAM PRETENSE AND POMPOUS ETIQUETTE

Molière's most penetrating shafts are not directed against medical inefficiency; what chiefly arouses his scorn is the general atmosphere of sham pretense and pompous etiquette surrounding the profession. The more we learn of the medical faculty of Paris in his day, the more must we believe that the doctors were fair game. The learned gentlemen, clad in violet cassocks and ermine-trimmed robes of scarlet silk, their heads surmounted by pointed caps, rode around Paris on white mules, frequently proceeded by lackeys who loudly proclaimed their august approach. Medicine with them was not a matter of observation and experiment, but of windy disputation. The Faculty of Paris gravely rejected the circulation of the blood because an Englishman had discovered it, and voted down quinine because it was American! The oath taken by the professors shows the comparative value attached to knowledge and to etiquette: "I swear and promise faithfully to teach in a long gown with wide sleeves, a doctoral cap on my head, a knot of scarlet ribbon on my shoulder." Molière everywhere ridicules this passion for professional propriety. In "Love as a Doctor" (*L'Amour Médecin*) four medical men, called in consultation, argue, not on the patient's malady, but on the relative merits of mules and horses as a means of professional transportation. Suddenly a couple of physicians start a discussion on medical ethics. Tomès objects to a certain doctor's treatment, not that it was wrong—indeed, he admits it would have saved the patient's life—but because this physician "made a mistake in holding an opinion opposed to his senior."

"Certainly," replies Desfonandrès, "pro-

fessional etiquette must always be preserved, no matter what happens."

"For my part, I am devilish strict about it," rejoins Tomès. "When three of us were called into consultation the other day with an outside doctor, I stopped the whole proceeding and refused to permit any one to express an opinion until matters were conducted according to rule. The people of the house did all they could—the case was pressing—but I would not give way; so the patient died bravely, while the dispute continued. . . . A dead man is only a dead man, but a neglected formality does great harm to the whole profession."

"It is better to die according to rule," says another physician, "than to recover in violation of it."

No wonder the physicians refused to attend Molière in his last illness, but let him die neglected! They saw a special providence in the fact that he was seized with the attack to which he succumbed while playing the leading rôle in "*Le Malade Imaginaire*."

SURVIVING TRACES OF PEDANTRY

Molière's satire, like all true satire, does more than make us laugh; it pictures a weakness in the medical profession, especially prevalent in his day, not entirely outgrown even now. Medicine has had the utmost difficulty in shaking off the medieval trappings that were once its most conspicuous ornament. In Queen Anne's day an English physician proclaimed his trade by wearing a wig, carrying a vinaigrette, and brandishing a gold-headed cane; even forty years ago, in New York, a surgeon dressed in a frock coat to perform an operation, and, in Paris, such an operation was a great ceremonial occasion, in honor of which all the surgeons donned their evening clothes. A few vestiges still remain of the medievalism which Molière so delightfully ridiculed. In his day physicians talked Latin as their professional language; thus Lisette, a serving maid in "*L'Amour Médecin*," remarks, as the doctors approach, "Now, pay attention! You will be highly instructed—they will inform you in Latin that your daughter is ill." The present

practice of writing prescriptions in Latin is a survival of this pedantic period, for even now the average doctor writes *Aqua* for "Water" and *Sig.* (*Signum*) for "Directions." Practically all other professions long since gave up their Latin; even college degrees, which, twenty-five years ago, used the learned language, are now commonly printed in English. The only excuse physicians have for using Latin is that the physicians of all countries can understand the prescriptions, but opinions differ as to the extent to which this is a practical advantage.

PERCIVAL'S "MEDICAL ETHICS"

For nearly a hundred years the medical profession in the United States has had a regularly printed code of ethics. The New York State Medical Society adopted a code in 1823 and the American Medical Association, on its organization in 1848, established an elaborate system of regulations which, with certain changes in phraseology and some in substance, still controls professional conduct. All these codes have the same significant history. In 1803, Dr. Thomas Percival, an English physician and philosopher, published his "Medical Ethics." Besides being a doctor, Percival wrote largely on ethical topics, especially for the young. He was the author of the widely circulated "Moral Tales and Reflections," a book written with the immediate purpose of improving the morals of his own children; and three volumes of his "Father's Instructions," a work directed to the same praiseworthy end, had an enormous circulation. His moralizings, which reach about the same intellectual level as the "Elsie Dinsmore" books, had perhaps a certain value when addressed to children, but they look strange when carried over into his rules for grown-up physicians. However, we must do Percival this justice: he wrote his "Medical Ethics," not primarily for the experienced profession, but as a rule of guidance for his son, who was about to engage in practice. Its composition, Percival himself says, "was directed to my son, with the tenderest impulse of paternal love, and not a single moral rule was framed without a secret view to his designation and an anxious

wish that it might influence his future conduct." The book's turgid seventeenth century phrases have a certain appropriateness when addressed to an immature mind, but Percival never foresaw that the physicians of a great nation, solemnly looking for means of improving their morals, would adopt as their own rule of conduct an ethical code originally intended for a boy. That, however, is precisely what happened in the United States in 1848.

THE VIEWPOINT OF NEW YORK DOCTORS

This medical code, indeed, is one of the curiosities of literature. That an eighteenth century non-conformist writer of ethical books for children should have composed it is not surprising, but that the great medical association of the United States and Canada should have retained it, with all its Sandford-and-Mertonish moral maxims, as their daily guide of action, until the year 1912, is fairly amazing. For the American Medical Association refused to abandon this phraseology until four years ago. Let us, however, take off our hats to the physicians of New York. In 1883, the state and county medical societies discarded the code, thereby losing their affiliation with the American Medical Association, which refused to receive their delegates. The New York physicians took the natural stand that, if a doctor were a gentleman, he would instinctively behave like one, code or no code; that, if he were not, his subscription to a mass of Tupperian platitudes would not make him one. The way in which the code constantly harped upon the high character of the profession offended good taste precisely as does a woman who publicly boasts of her virtue. Some things are best taken for granted. The New York physicians objected to the code also because it prohibited consultations with homeopaths. On this one point the New York medical societies and the American Medical Association fought for twenty years. The New York doctors declared that, while they had no sympathy with the theories of homeopathy, homeopathic physicians were not, as the code practically stigmatized them, "empirics" or "quacks"; for the most part they were

educated men, having as much knowledge as regulars themselves of anatomy, physiology, and the morbid processes. Thus they asserted that the section prohibiting consultation with the "new school" was simply inhumane, since it might conceivably deprive patients of indispensable advice. Finally the New Yorkers won their fight, as the American Medical Association, in 1903, abandoned its "Code" and substituted its "Principles" of Ethics. It still retained large paragraphs and Dr. Percival's phraseology, with all its ridiculous truisms, which was not finally obliterated until the revision of 1912. Still in these revised rules of action old Dr. Percival occasionally shows his head. We can take these rules, therefore, as fairly representing what the mass of American medical men regard as strict professional propriety in their relations with the public and with each other.

SHOULD A DOCTOR TELL THE TRUTH?

Should the physician tell his patients the truth? Is lying, in the interest of the patient, ever justifiable? Most moralists long ago reached the general conclusion that no circumstances would justify a lie, and the doctrine rightly or wrongly known as Jesuitism—that the end justifies the means—has long been regarded as utterly vicious. Suppose that you consult a physician suspecting that you have cancer. If you have, must the doctor tell you so? There are occasions when truth-telling will have such harmful effects that the patient may possibly die; despite that, should the truth be told? This is probably the ethical problem that most frequently faces the practitioner. Usually the husband or wife or nearest friend will insist that the truth, if disheartening, shall be kept from the patient. The accepted rule, as at present laid down in the Principles, clearly countenances this procedure. "A physician," it says in Section 3 of Article I, "should give timely notice of dangerous manifestations of disease to the friends of the patient. He should neither exaggerate nor minimize the gravity of the patient's condition." The physician, that is, is to inform the patient's friends, but evidently not the patient him-

self. "How can I do otherwise!" exclaims the physician. "Here is a neurasthenic woman. If I tell her she has incurable heart disease, she will collapse and fall to the floor. I have seen that very thing happen. Death will come earlier than it would otherwise. I am a humane man, and to ask me to deal frankly with her is to ask too much of human nature."

Probably most weak human beings would behave precisely as would this physician; however, in the opinion of many, the truth, whatever its immediate consequences on the individual patient, should be told. In the first place, there is no assurance that the truth will kill the patient or even aggravate the malady; in actual practice it seldom does. The doctor's action only postpones the crisis, for some day the patient must be told, or, worse still, must learn the facts himself from certain stray hints and details which the utmost care cannot conceal. In fact, a practical argument against misrepresentation is that it practically never deceives. Even the average intelligent child knows whether the doctor is telling the truth. "You are all holding something back from me," is one of the commonest complaints of the sick room. And the normal individual stands bad news much better than a constantly torturing doubt. One of the most salutary facts of Nature is the power given us to withstand affliction; in face of calamity great reserve forces, whose existence we had not hitherto suspected, usually come to our assistance. In exceedingly rare instances the truth may hasten the end, but these cases do not affect the principle involved. That principle is that an atmosphere of deceit, a reputation for lying, is a bad thing for a great profession. Whenever you visit a doctor on an important case, the question always back in your head is: "Is he telling me the truth? Is he trying to 'let me down easy?'" Why do you always ask this question? Simply because you know of numerous cases in which the physician—with the best intentions, of course—has deceived. Very likely he has deceived some one at your own request and you may have even participated in the deceit. When you are informed, there-

fore, that you have no serious malady, the reassurance gives you little comfort, for you have heard doctors say that to patients who died soon afterward. But the unfortunate fact is that, in your case, the doctor may be really telling the truth, and, if you only trusted him, a tremendous weight would be lifted from your mind.

Probably the physician tells the truth now more commonly than he did a few years ago. Many never follow any other practice, providing, of course, that they are dealing with patients who are morally and mentally responsible. Others have no fixed rule on the subject, preferring to handle each patient according to his own temperament and the necessities of the case. With many patients who have responsibilities, and whose unexpected death would disarrange their affairs and bring embarrassments upon the dependents, the truth, of course, should always be told. It is questionable, however, whether outright deception, involving, as it does, the whole reputation of the profession, is justifiable in any instance.

"BREAD PILLS"

The ethical code is silent on a question closely allied to this one of truth-telling, for it does not forbid the widely prevalent habit of giving placebos, or bread pills. Doubtless a large proportion of medical practice to-day is composed of neurasthenics whose sickness frequently takes the form of an imaginary invalidism. Since no medicine can help these patients, the average physician to-day thinks that there is only one way of handling them, and that is to sympathize with their troubles, to make the diagnosis they are looking for, and to prescribe fictitious medicine. If you can catch your doctor in a confidential mood, he will tell you of marvelous cures he has accomplished with these bread pills. Here, again, the ethical fallacy lies in supposing that a patient relieved here and there justifies a practice which, in its general influence, is demoralizing to the public and to the profession. Merely from the standpoint of professional dignity, the practice is beneath contempt; what grown man wishes to take compensation for cheap little lies of this sort? A

patient who suffers from an imaginary ill is not physically, but mentally, sick, and the proper treatment hardly consists in encouraging him in his obsession, but in educating him out of it. He is a proper subject, not for the general practitioner, but for the neurologist. What renders the custom especially obnoxious is the fact that the chief motive of placebo-giving is probably venal. The doctor does not wish to lose the patient and he knows that, if he refuses treatment, the woman—and more commonly it is a woman—will go elsewhere. Such patients, in whom the "doctor habit" is highly developed, are usually profitable.

PROFESSIONAL CONFIDENCES

To what extent must a physician respect the confidences of his patient? Do any circumstances ever justify him in revealing facts learned as a result of his professional association? No question of medical ethics has caused more discussion than this. Dr. Percival's code absolutely prohibits a physician from revealing, under any conditions, the secrets of his patient. For him the sick room had the same sacred character as the confessional. Even though the physician should learn, as a result of professional confidences, that his patient was a murderer, and actively pursued by the police, the old ethical code insists that he must still maintain silence. Taking their cue from this attitude, many states, several years ago, passed laws which made it illegal to disclose information derived in medical attendance, though most laws limited this to such information as was medical in its nature. A physician who learns that his patient is given to poisoning his successive wives or who is a Jack the Ripper in disguise can legally notify the police of that fact. But the old-time physician regarded such information as sacred, even so great a man as Dr. Austin Flint, of New York, making an elaborate argument to prove that the greatest criminal was entitled to secrecy regarding his criminalities. "The ethical rule," he said, "is without exception." Dr. Flint's argument was that the most infamous criminal was entitled to medical care, and that he could not obtain

it if he felt that there was any danger that his secrets were likely to be disclosed.

The American Medical Association kept intact the old Percival rule, which apparently justified this extreme form of secrecy, until 1903. But notions on this subject are now changing. No one now believes, of course, that a physician should protect a criminal in his crime, and the only question remaining is whether he should keep silent on information that is of a purely medical nature.

Had Percival lived in modern times, he would probably never have framed any such principle of conduct. In his day almost nothing was known about disease, and the existence of microbes was hardly suspected. Practice was largely a matter of cupping and bleeding, and giving all manner of absurd and useless drugs, while surgery, an unborn science, consisted mainly in the amputation of members by the local barber. Disease was then regarded as more or less one's personal possession and an affair with which the public had no concern. But there is nothing in the world quite so social and indiscriminating as a disease germ. It represents the quintessence of democracy. A child afflicted with scarlet fever is a great menace to the community, his disease is something that by no means concerns exclusively himself and the members of his immediate family.

SECRECY—OR SOCIAL JUSTICE?

Whatever medical codes may say about secrecy, the law now recognizes this great change. It is a curious contradiction that a state like New York, which has a law by which a physician is "not allowed to disclose any information which he has acquired in attending a patient," at the same time has laws which make it a misdemeanor for this same physician not to report cases of most contagious diseases to the health authorities. And this great ethical problem now faces the fraternity in one particularly distressing form. That is in the matter of the venereal diseases, which are not yet "reportable" under health laws, though most forward-looking thinkers believe that they should be. An undue

protection watches over the men and women afflicted with such infections, because their contraction frequently, though not necessarily, implies a moral stigma. Unfortunately a certain proportion of the victims are entirely innocent persons. These are among the most prevalent infections known, and the most terrible in their consequences, not only to the patient, but to his posterity. They have almost endless secondary consequences, insanity in children being frequently traced to a syphilitic parent. The blindness of the new-born is one of their commonest results. What must the physician do who learns that his patient is afflicted with this disease, and at the same time learns that he is about to be married to an innocent woman? Is it his duty, as it is commonly phrased, to "give the man away," or do professional ethics insist that he keep quiet and acquiesce in the commission of a hideous social crime? Merely to state this case disposes of the absurdity of the ethical rule which still widely regulates professional conduct.

A COMMON-SENSE ATTITUDE

In this instance the new principle of the American Medical Association is probably far ahead of the current practice. This section admirably states the proper attitude on this whole subject of professional "patience, delicacy, and secrecy."

"Patience and delicacy should characterize all the acts of a physician. The confidences concerning individual or domestic life entrusted by a patient to his physician, and the defects of disposition or flaws of character observed in patients during medical attendance should be held in trust and should never be revealed except when imperatively required by the laws of the state. There are occasions, however, when a physician must determine whether or not his duty to Society requires him to take definite action to protect a healthy individual from becoming infected, because the physician has knowledge, obtained through the confidences entrusted to him as a physician, of a communicable disease to which the healthy individual is about to be exposed. In such a case, the physician should act as he would

desire another to act toward one of his own family under like circumstances."

Another question that has always agitated the profession is the extent to which a doctor may advertise his wares. The average practitioner will indignantly meet this issue by declaring that "he must not advertise at all"! But this is absurd, since all doctors do advertise to some degree. They advertise when they place signs in their windows, giving their title and office hours. In Paris even the use of a door-plate is "advertising" and, therefore, unethical; hunting up a physician there, unaided by the usual sign, is sometimes a tedious process. In this country a large shingle is "unethical"; the "greater the sign the smaller the doctor" is the usual comment. In some parts of the country it is not unprofessional for a physician to print his card, with office hours, in the daily press, while any New York or Chicago doctor who did this would be dismissed from his medical society. But the medical gentleman advertises himself in other ways; indeed, there is probably no professional man who advertises so much. The handle always prefixed to his name, "Dr.," is advertising of an exceedingly blatant kind. No other profession uses a title that so immediately proclaims what it has to sell, for, in Anglo-Saxon countries, "doctor" in common parlance means a doctor of medicine. We do not refer to Lawyer Brown, Preacher Smith, Editor Jones, or Engineer Robinson. Even college professors, in talking to each other, always use a plain "Mr.," and army officers do not use their military titles among themselves. The post office department, which sells stamped envelopes, with printed name and address, at so much per thousand, will not print "Dr." before the physician's name, on the ground that it is advertising.

UNPROFESSIONAL ADVERTISING

Thus we see that doctors, despite all their ethical pretensions, do advertise. But the rule against outright advertising, and especially that more indirect sort by which the enterprising practitioner, without purchasing space, succeeds in keeping his name in the public press, has a

substantial basis. The medical code prohibits "solicitation of patients by circulars or advertisements, or by personal communications or interviews, not warranted by personal relations." "Oh, he's a good advertiser," is frequently remarked of a certain type of physician, meaning that, although not openly violating the code, he manages to keep himself in the public eye. "It is unprofessional," says the present code, "to secure patients by indirect advertisement or by furnishing or inspiring newspapers or magazine comments concerning cases in which the physician has been or is concerned." The Dr. Munyon type of advertiser is bad enough, but he is not nearly so evil an influence as the physician who exploits himself in this more indirect fashion. The recent Friedman case abundantly illustrates the wickedness of such procedures. Here was a man, a regularly graduated doctor of medicine, who came to this country with a turtle serum which, he announced, would cure the victims of tuberculosis. Had Dr. Friedman purchased space in a newspaper, as a dry-goods store does, and openly advertised his wares, most people would have put him down as merely another humbug. Many respectable newspapers would never have printed his advertisements, and there is certainly not a magazine of any standing that would have accepted them. But Dr. Friedman, by the use of an organized press agency, succeeded in getting thousands of columns of free publicity. The newspapers printed this stuff simply on its face value as news. Thousands of poor people mortgaged their homes, and sold their household furniture, merely to get the money to pay Dr. Friedman for his treatments. His whole scheme was dependent exclusively upon advertising for its success; not open advertising, but the indirect kind which the code properly condemns. There have been plenty of other cases of the same kind.

On the other hand, a certain kind of publicity is excellent, not only for the profession, but the people. The new interest which has developed in medical topics is legitimate and wholesome, although many medical leaders still deprecate it. Some take the stand that no physician

should ever furnish information on any medical topic to a newspaper or magazine writer, and that no physician should ever contribute on medical topics to any lay journal. But these pedants, who comprise few important men, are rapidly disappearing. It is now recognized that physicians play only a certain part in fighting disease. The most enlightened medical leaders now attempt to unite all forces—doctors, social workers, civic organizations, women's clubs—in the improvement of the public health. Nearly all health boards have publicity agents, whose business it is to circulate useful and accurate information. How far would the present fight against tuberculosis have gone without non-professional coöperation? The publicity that medical topics have had in the magazines in recent years has had much to do with reducing the death rate. The attitude of the best men in the profession is not hostile to this publicity, even when the matter is prepared by "popular writers." The ethics of this situation are now pretty clear. For a scientific investigator to publish his results first in the popular press is beyond the pale. A year or more ago a young doctor in New York, who claimed to have discovered the germ of typhus, first permitted his results to be printed in a newspaper. The proceeding created a great scandal, and the discoverer was prohibited from reading his paper before a scientific body at which it had been scheduled. His discipline caused great criticism at the time, but it was probably just. If scientists develop the habit of rushing to the newspapers with their discoveries, chaos will result. After such a discovery has been presented to a scientific body and published in a scientific journal, it is not unprofessional now for the medical man to assist a popular writer in the preparation of a popular article. The only prohibition now is that such an article shall not exploit the personality of the scientific man—a prohibition not strictly enforced—and, of course, that it shall not distort the facts or beguile the public with false hopes. Indeed, the American Medical Association recommends the establishment of publicity bureaus in all parts of the country, for the purpose of

giving the press accurate information on medical topics. Such a proposal would have horrified Dr. Austin Flint, and still arouses the ire of the ultraconservative. But it is in keeping with the modern spirit.

MUST ONE DOCTOR "PROTECT" ANOTHER?

In the whole medical attitude what most grates on the popular nerves is the assumption, which shows itself in many ethical rules, of a proprietary interest in the patient. That section of the code which regulates "the duties of physicians to each other and to the profession at large" is the part which arouses greatest criticism. This is what moves George Bernard Shaw, in his preface to "The Doctor's Dilemma," to declare that medical ethics is merely a scheme to "conceal the doctor's errors and protect his income." It is not likely, however, that the cause, as Shaw implies, is always the desire of gain, though in many cases that probably does play a part. It would be easy to show that the medical profession, as a whole, is the least avaricious of all; there is none other that is using its energies to destroy itself, for certainly the tendency of preventive medicine is to decrease disease and so decrease opportunities of employment. There is also none other that has, as one of its cardinal ethical rules, a provision which insists that, where the situation warrants it, free services shall be given by all its followers. It is not usually the love of gain, but more the spirit of freemasonry, that explains the common tendency that physicians have to stand by one another, even in their mistakes.

A doctor called in consultation usually informs the family that the attendant's treatment has been perfect—even when, as often happens, the treatment is radically changed. All medical codes have insisted upon this little deception. "A kind word," says the old Massachusetts code, "from the consultant to the family, in behalf of the attendant, may be of great service to all parties." The protection of one physician against the criticisms of the consultant are ironclad. Old medical codes solemnly stipulated that, on entering the sick room, the regular attendant should go first, with the con-

sultants following in the order in which they had been called into consultation. The attendant examined the patient first, and then the consultants, in the order of precedence. The attendant, after the conclave had retired into a "secret place," delivered his opinion, when the others, in due order, were permitted to give their opinions. The whole proceeding was conducted in accordance with a most elaborate ritual. The revised ethics have abandoned a good deal of this trumpery, though still there runs an undertone which suggests a property interest in the patient. Reading between the lines there is an implication that physicians have the habit of stealing one another's patients and that the attendant should be protected against highwaymanship of this kind. Here still the interest of the patient is apparently secondary to the interest of his doctor. It is not unlikely, for example, that a consultant has greater skill than the attendant. He might conceivably save the patient's life, while the continued ministrations of the attendant might endanger it. Under these circumstances the patient or his friends ought to have the privilege of retaining him. But the code strongly opposes any such change. "When a physician has attended a case as a consultant he should not become the attendant of the patient during that illness except with the consent of the physician who was in charge at the time of consultation."

SOME ETHICAL ABSURDITIES

That is, if your regular physician is mulish, as he sometimes is, you are prohibited from obtaining medical skill that conceivably might restore you to health. It is well enough to say that any self-respecting physician, who is asked to withdraw in the interest of the patient, would do so. Human nature, however, is queer, and a disposition to hang on even where we are not wanted is not unusual. There should be no such rule placed in cold type. The doctor's dictum in Molière's comedy, "It is better to die according to rule than

to get well in violation of it," seems to be the spirit back of this prohibition.

The "Principles" contain other stipulations that strike the layman as foolish. Why shouldn't a surgeon who invents a surgical instrument patent it and reap his inventor's profit? The rule says that he must not, yet it does not forbid him from copyrighting a book on surgery and taking an author's profits. The code prohibits, and very wisely, the giving of secret commissions to druggists, hospitals, or other doctors. But it is strangely silent on the one thing which, next to fee-splitting, brings the medical profession into disrepute. This is expert testimony. It is apparently not "unprofessional" or "unethical" for a medical man to accept a fee for testifying in a murder trial or damage suit, even when that fee is the chief inspiration of his scientific opinion—at least the code says nothing about it. The Thaw trial showed the abuse in its most aggravated form. Almost any large will or damage suit will find medical experts, sometimes men of "high professional standing," drawing, on the same facts, conclusions that are diametrically opposed. What is the remedy for this? Many medical men advocate expert commissions appointed by the court and paid by the state. Most lawyers say that this is impossible since no legislature can deprive a citizen of his constitutional right to expert testimony. A few years ago Judge Willard Bartlett, of the New York Court of Appeals, reviewed the whole subject of medical expert testimony, reaching the conclusion that the legislature could do nothing about it. The remedy for this great abuse, he said, lay in the hands of the doctors themselves. It was a subject that could be handled only by their ethical code. If this code would disfellowship physicians who obviously sold their opinions on the witness stand, the abuse would disappear. So far, however, codes of ethics have left this subject, far more important than precedence at consultations or rules prohibiting the kidnapping of patients, severely alone.

A PAINLESS WAR CURE FOR BURNS

THE REMARKABLE TREATMENT THAT IS GIVEN TO FRENCH SOLDIERS WHO HAVE BEEN
BURNED BY EXPLODING SHELLS AND THAT HEALS WITHOUT
LEAVING A DISFIGUREMENT

BY

ARNO DOSCH-FLEUROT

A SOLDIER from the Somme was brought into St. Nicholas Hospital near Paris so extensively burned that he was scarcely recognizable as a human being. Just six weeks later, he was up and walking about, and the only indication he showed of having ever been burned was an occasional discoloration in the skin. The new skin that had grown over two thirds of his body was just like the skin that was there before, except for an occasional smudge of dark coloring, but in the course of a few months, as other cases show, even that will have as even a pigment as the rest of his skin. There are no drawn places, no reddened tissue, the usual marks of a severe burn.

No less remarkable than this complete disappearance of all traces of the wound is the fact that the soldier suffered no pain after the first day.

St. Nicholas Hospital is full of similar, even worse, cases. It has cured 450 cases in the last year, all of them extensive burns, as it does not get the mild cases. It is designated the "hospital for the badly burned," and a glance any morning into one of its dressing rooms shows how thoroughly its name is justified.

I have recently made a number of visits to St. Nicholas Hospital at Issy-les-Moulineaux and studied its method of cure because the interest in it is obviously much wider than the war. While many of the new things in medicine and surgery developed by war are of value chiefly in war, this is more valuable in peace than in war. For burning is less common on the battlefield than in factories or in the ordinary course of every-day life. In war there are only occasional cases, but every hospital

in the world has its aggravated cases of burns that hang on for weeks and months.

The cases of severe burns on the battlefield come chiefly from the bursting of a shell directly in a man's face. Usually he is killed, and that is the end of it. But occasionally he survives the shock and escapes the fragments of shell, and arrives in hospital with a face that his best friend would not recognize. Then there are the cases, even more unusual, when a soldier is met in an attack by boiling water or liquid fire. The soldier from the Somme was one of the victims of boiling water.

Certainly few people who have been as badly burned by boiling water as he have ever escaped without a disfiguring trace, and fewer yet have suffered no pain during the cure. That is what makes the work at St. Nicholas Hospital so interesting. Of course, it has there an added interest as the victims are still numb with the shock of wounds suffered in battle when they feel the burden of the pain dropping from them. But it does not need this dramatic quality to hold the attention.

The cure is, in addition, simple and easy to understand. I had best describe it as I first saw it applied.

A young soldier with his hands and forearms bundled was led in by an orderly and seated on a stool. A nurse removed the bandages and the burned skin. She washed off the pus with a small rubber hose, and dried the flesh with an electric hot-air drier. Then she brought an atomizer filled with a hot liquid. This she sprayed carefully over the hand and forearm, so that they were soon entirely covered with a soft, white, waxlike covering.

While it was still hot, she laid strips of thin cotton batting over it and painted

this with the same liquid until the whole wound was sealed in under the drying liquid. Then she wrapped it up in thicker cotton batting, and went to work on the other hand.

Whatever the victim may have felt about it, this was a very simple case. I saw the hands a week later and they were covered with new, supple skin. It is not quite so simple a matter when the burns are deeper, but as the process is always the same and does not vary on account of the degree of the burn, before going on to describe other cures I had perhaps better describe the process.

The liquid which does the work is nothing more than a combination of paraffine and resin. It makes an air-tight covering over the burn and, at the same time, soothes the wound and allays the pain.

NO PAIN IN ITS APPLICATION

Laid on with a brush, it would be painful, but as it drops in tiny globules, the patient does not even feel the fall of the spray on the flesh, and it is quickly covered with a waxy surface that becomes air-tight as soon as the strips of cotton batting are laid over it and painted evenly with more of the same liquid.

The temperature of this liquid, when applied, is 70 degrees Centigrade, or 158 Fahrenheit. My attention was called to the heat first by the fact that a drop of it fell on the sound skin of one of the patients so that he cried, "It is burning me." As he had just had several cans of it sprayed and painted on his back, this seemed curious to an amateur in medicine until it was explained to me that he did not feel the heat on the flesh as he would on the skin. Great care is always taken to see that none of it touches the sound skin, and this, as a matter of fact, was the only occasion on which I saw any one even squirm.

The whole thing seems so simple it strikes one at once as remarkable that it is not the common process for healing burns everywhere. And when you see the size of some of the burns it cures, a whole back, for instance, the wonder at it grows. I said something to this effect to the medical chief, Dr. Barthe de Sandfort, and he replied that it would probably be more widely

used if it were not for the difficulty of preparing the paraffine and resin just right.

"I have been working at it for twenty-two years," he said, "and I have a good deal still to learn about the varieties and qualities of the paraffine and resin. I have been able to train one other man to do it as I do, but it is a long, slow process of education. I cannot train many workmen to do it, and at the present time I am producing hardly more than enough to supply this hospital and the children's hospital in Paris."

THE DOCTOR WHO DISCOVERED IT

French hospitals and French methods of doing things in general are so simple and free from pretension, I found that the man whom I had been talking to, the director of the work, was also the inventor of the process, and had gained great renown throughout France during the war for the apparent miracles he had performed. As I had arrived in the middle of the work without asking any one's leave I thought I had better explain that I had come to write an article for the *WORLD'S WORK*.

"I am afraid you are merely going to bring down upon me more requests," he said. "I have already received a number of letters from American hospitals requesting either some of the preparation, or my method of making it. Unfortunately I have not been able to supply the stuff itself, and it would not do any good for me to send the formula. But I have learned from my correspondence that there is a much wider and better choice of paraffines in America than in France, and I am contemplating sending a man over to investigate. If it is true, I shall do all my manufacturing in the United States, and ship it to France when made. In that case America will have the first call on me."

On further inquiry I found that Dr. Barthe de Sandfort has named his product "ambrine," and, naturally, his success with it has brought imitators. The most successful of these, I learn, are Germans, who are using a somewhat similar preparation for their badly burned soldiers.

With all due respect to Dr. Barthe de Sandfort's personal ability in manufacture, what interested me most about his process

is that the cure lies in the method, rather than in the particular product. Doubtless his preparation is the most successful, and, on that account, deserves special recognition, but the greatest benefit he has done the world is to do it at all. He told me he would like to produce his "ambrine" on a commercial scale, and if he does so and makes a fortune from the sale of it, I for one would say it was one of the most justified fortunes ever amassed. I saw him spare terribly burned men enough pain during a few mornings' work to justify him in becoming at least a millionaire.

In the dressing rooms the ambrine is used in a seemingly casual manner and is certainly not spared. The nurses have become so expert at estimating the temperature that I have seen them hold a small can of it over a gas flame until it was heated to about the right point. The temperature may vary, they told me, from 60 to 80 degrees Centigrade, giving a possible difference of 20 degrees Centigrade. In actual use a can or other receptacle of the preparation is taken from the heater, and brushed on until it is all gone. If it is getting too cold a few seconds of holding it over a gas flame will restore the needed heat. This shows that the use of the method is not complicated by very expert knowledge. After watching its use I feel that I could myself at a pinch use it successfully. Whatever of expert knowledge is required rests in mixing the paraffine with resin.

DELAY IN REACHING HOSPITAL

The cases that come to St. Nicholas, in fact, are usually much more complicated than those which arise in ordinary hospital work. Most of them do not reach the hospital before three days and many of them take five. As they have usually been in rail-head hospitals where there were not adequate facilities for handling such cases, some of them arrive practically untouched. Further delay is also caused many times by the fact that the wounded men have lain many hours in "no man's land" before they were rescued from under the enemy's fire. Decay has set in, retarding the cure. But even in these cases the rule is to wash the wounds merely with boiled water or a

very mild antiseptic. As soon as the air is excluded, the decay stops.

It is not necessary to go into all the distressing details that frequently attend the arrival of a new patient, but pieces of shell, burnt powder, and dirt must usually be picked from the burns, especially if on the face. It is not always possible to get the burns free from contamination without causing the patient great immediate pain, so the nurses do the best they can and let it go at that. In any event the, dressing remains only twenty-four hours, and comes off freely the moment the bandages are removed. Under the mask the flesh working its own cure has usually produced a layer of secretion, and as this is washed away the dirt comes with it.

The same thing holds true where the wound has become badly contaminated. By the mere closing out of the air with the waxy covering and its removal each twenty-four hours, the flesh almost invariably works its own cure.

SKIN MUST BE PERFECTLY DRY

I should add here that the process each day is identical. After the waxy covering is removed, the burn is washed as clean as trickling water can wash it. Then it is carefully dried with the electric drier. It is important not to leave any dampness anywhere on the burn, for it will prevent the globules of the ambrine from forming the protecting surface and will also make the hot preparation burn. If the skin is, on the other hand, perfectly dry, the patient does not know when the drops fall.

Dr. Barthe de Sandfort told me to emphasize the fact that there must always be a covering of the waxy stuff on the flesh before the layers of thin cotton batting are applied. Otherwise the threads of the cotton batting will stick, and the dressing will not come off in one piece.

Suppose, as is frequently the case at St. Nicholas, the patient's entire face and head has been badly burned. I saw one such man who was burned to the third and fourth degree. There was hardly any flesh over the tendons. But the treatment was the same as for first degree cases. Each day as the accumulation of secretion was washed off, his entire head was dried

with the electric drier, it was sprayed over with the little waxlike globules, the cotton batting was laid on and painted with the preparation, and everything but the mouth was sealed up. For twenty-four hours the man lay tranquil, without pain, and the process was renewed. Each day I could see where the very flesh was being renewed, and where the burns were the shallowest skin began to appear. The deeper the burn the slower was the healing, but in the end the man had a new normal skin over his face, head, and neck. Within a month from the time he entered the hospital, the skin was entirely remade and, after a day or so with oxide of zinc spread over the new cuticle, he walked forth whole.

That is considered a simple case. The difficulties are encountered with cases that have been treated for months under less fortunate circumstances. There is a doctor undergoing treatment at St. Nicholas who was terribly burned by an explosion of acid. His face, scarred and drawn, has healed, but his hands have not. The treatment given him is the same as if he had new burns, and gradually the healthy skin is growing out from the edges, like young ice, and closing over the angry spots.

The process also has grown skin where there never was skin before. One soldier had his biceps shot away and, instead of having a scar, he has an arm covered with an even layer of skin, minus his biceps.

After I had been to St. Nicholas a time or two I noticed that several of the attendants had the slight discolorations in their skin which indicated they also had been burned. I asked and learned that nearly all the attendants had been recruited from former patients, the worst, in fact. They were men with no special knowledge of nursing but they were experts at this work. There are only four women nurses, that is to say, regular graduate nurses, and two of them are about to leave with a medical mission sent by the French Government to Russia and Rumania to teach the use of the method in their military hospitals.

One day I spent the entire morning watching one of the doctors attending to a series of cases. He was himself very active and efficient, and there was nothing to indicate he was not in perfect health. But just before he left, after finishing with all the other cases, he sat down, unrolled the puttee that belonged to his uniform, removed some bandages, and loosened a waxy mold, revealing a half-healed burn from just below the knee to the ankle.

"I came here as a patient a couple of weeks ago," he explained, "and for the last week, as the hospital is short-handed, I have been well enough to help."

AN AMERICAN SURGEON'S OPINION

Seeking an American medical authority to visit the St. Nicholas Hospital with me, I found that Dr. William O'Neill Sherman, the surgeon-in-chief of the Carnegie Steel Company and other subsidiary companies of the United States Steel Company, was in Paris. I asked him to go, knowing there was no one in a position to take greater advantage of the cure, if it proved to be all it appeared to me. He went willingly but skeptically, pointing out to me that it was in principle contrary to all accepted methods, insomuch as it neglected the question of infection. But he came away so much impressed that he visited the hospital for several hours for the next three days, and planned to try it in the cases of men badly burned in the steel mills.

"The supple, new skin grown without grafting," he said, "is a remarkable enough thing in itself, but more striking yet from a surgical point of view is the rapidity with which skin is grown by this method over amputations. I saw where skin had been grown, without seam or scar, over two half-amputated feet. It had taken six weeks only. Ordinarily that case would have required at least five months in the hospital.

"Mind you, I have only seen the cases handled by Dr. Barthe de Sandfort, but I am sufficiently impressed to try it in my own work."

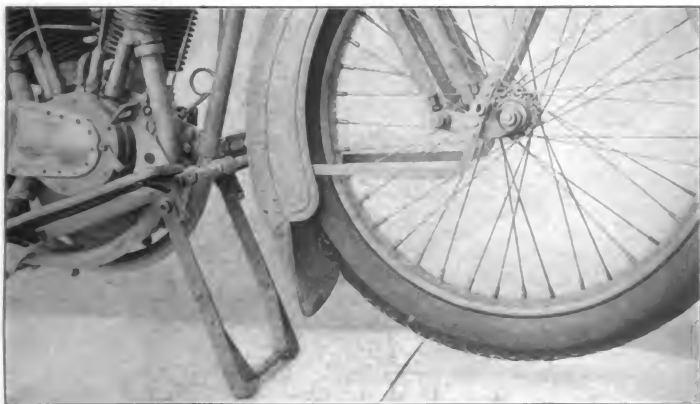


MAN AND HIS MACHINES USEFUL INVENTIONS

A SEA-SLED

RACING motor boats are now being constructed which, because of their shape and the fact that they skim lightly over the surface of the water, are called "sea-sleds."

One of these boats, a 38 x 8 foot cabin cruiser, with an engine of a little more than 300 horse-power, recently developed a speed of thirty-four miles an hour, making her probably the fastest cabin motor boat in the world. The boat, which weighs about six tons, has comfortable owner's quarters, with a sleeping



A CONVENIENCE FOR THE MOTOR CYCLIST

A stand for the front wheel of motor-cycles which enables a rider to locate and patch a puncture readily



FOR PREVENTING FIRES

A receptacle for waste rags and rubbish that automatically locks itself, cannot be overturned, and can be opened only by pressure upon a foot-lever

berth and buffet, a place for the mechanic, a watertight bulkhead, and space for all the machinery.

A FRONT-WHEEL STAND FOR MOTOR-CYCLES

A STAND for the heavy back wheel of a motor-cycle is a necessity, but it was only recently that a company manufacturing motor-cycles conceived the idea that a stand for the front wheel would add greatly to the convenience of the rider when it was necessary to make repairs, and so the manufacturers set about equipping their new models of motor-cycles with the device.

The stand is smaller than that for the rear wheels, but lifts the front wheel well off the ground, enabling the rider to locate and to patch a puncture or adjust the axle in a much shorter period than was heretofore possible. The stand is placed just behind the front wheel and when not in use folds up conveniently out of the way under the foot-boards.

A SAFE WASTE CAN

A WASTE can made of galvanized steel, which automatically locks itself and can be opened only by pressure upon a foot-lever, is a device which greatly diminishes the danger of fires in factories, where oily waste scattered around or deposited in other receptacles may result in a disastrous blaze.

A SIMPLIFIED GRAIN BINDER

A NEW style of grain binder contains only about one half as many parts as other binders, there being, for example, only one chain belt and two sprocket wheels. The main driving mechanism is on a vertical shaft so placed that everything can be easily inspected and oiled. The binding apparatus, being carefully hung and balanced, can be easily shifted; the absence of a frame around the drive wheel permits the ad-



A SIMPLE AND EFFICIENT GRAIN BINDER

That contains only about one half as many parts and is smaller and lighter than most other binders



A NEW STYLE AUTOMOBILE

The latest adaptation of the motor wheel, which can be driven for many miles on a small quantity of gasoline

justment of an extension rim for use on soft ground; and the folding and elevating details of reel and apron are such that for transportation the machine can be made small enough to go through any ordinary farm gate, over any standard-width bridge, etc. Improved threading and knotting devices and the light draft, short hitch, and reduced weight of the machine as a whole offer further advantages.

A NEW TYPE OF AUTOMOBILE

THE latest adaptation of the motor wheel, chiefly used for propelling bicycles, is in its use as the motive power for driving a light, two-seated buckboard. The entire outfit weighs only 135 pounds and will run for many miles on one gallon of gasoline. The springy construction makes driving either on city streets or country roads very comfortable.

The control is extremely simple and therefore easily operated, consisting as it does of a thumb lever attached to the rim of the steering wheel. A clutch and a foot-brake are provided, and the steering arrangement is like that of an ordinary automobile.

A BARREL ELEVATOR

A MACHINE that elevates barrels from one floor to another at the rate of 120 barrels an hour is being successfully used in a Western oil refinery.

The barrels are rolled by gravity down a chute,

where a bracket with curved arms mounted upon an endless revolving chain belt picks them up and carries



FOR RAISING BARRELS

A device in use in a Western oil refinery which transports barrels from one story to another by means of a pair of arms mounted upon an endless chain belt

them up one story. Here a pair of cams upon the side of the upcoming elevator (placed just between the opening through which it is desired to discharge the barrels) engages the ends of the curved lever arms which carry the barrels, and trip an automatic discharging lever, which empties the barrels into the desired opening.

AN ELECTRIC EGG COOKER

A HANDY device for cooking eggs uses the heat developed by electrolysis of water, rather than that produced by the resistance of wires, to do the cooking. The cooker is nickel-plated on the outside and contains a porcelain dish, in the inside of which is a small well for holding the water to be converted into steam. A definite quantity of water, depending upon the length of time the eggs are to be cooked, is put into the well, which is graded in lengths of time that the cooker is to operate.

To insure cooking the eggs uniformly the tray holding them is fixed so that the steam which has condensed on the surface of the eggs will run back into the well, but as soon as the surfaces of the eggs become heated to the temperature of the steam, condensation no longer takes place on the surfaces but



BOILING EGGS AUTOMATICALLY

A device by means of which eggs can be cooked for any desired period and the electric current automatically cut off when they are cooked

occurs on the inside of the cover, on which it runs down into a groove, that encircles the cooker, where the water remains.

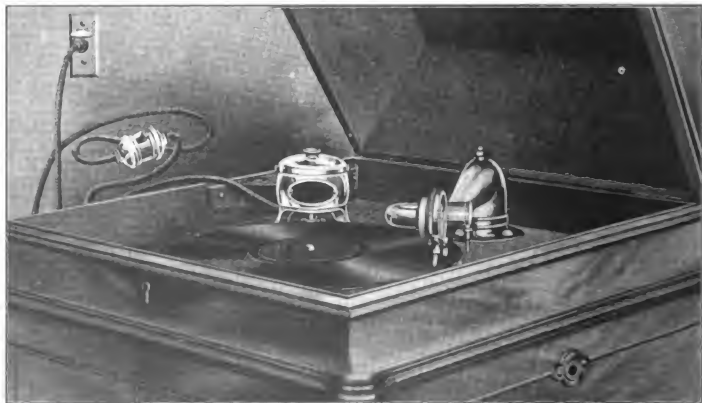
As soon as all the water in the well has been turned into steam the current is automatically turned off. The device is also used for heating nursery bottles, and it is unnecessary to watch the milk, as it is impossible thus to burn or scorch it.

A MOTOR FOR THE PHONOGRAPH

BY MEANS of a small electric motor it is no longer necessary to wind the spring of the phonograph after each record has been played. And the

spring becomes unnecessary, for the motor, which can be attached to any electric light socket, revolves the disk. With this motor, a non-changeable needle, and a repeating device for records a disk can be played continually for dancing.

The motor is set on the phonograph close to the record so that the arm of the motor (on the end of which there is a small rubber disk) engages the plate on which the phonograph record rests. The use of the motor is said to minimize noise and vibration and, furthermore, the record is rendered with the same rhythm throughout and there is no running down toward the end with its attendant discordant sounds.



RUNNING THE PHONOGRAPH BY ELECTRICITY

A small electric motor turns the phonograph record at an even rate of speed so that it is not necessary to rewind the machine after a record has been played

The World's Work

ARTHUR W. PAGE, EDITOR

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MR. BRIAND AND MR. LLOYD GEORGE

THE REORGANIZATION OF THE ENGLISH GOVERNMENT AND THE FRENCH ARMY AND THE CHANGE IN THE RUSSIAN PREMIERSHIP WERE ALL TO PROSECUTE THE WAR MORE VIGOROUSLY THIS WAS AN ANSWER TO THE MANY SUBTERRANEAN GERMAN EFFORTS FOR SEPARATE PEACE WITH SOME OF THE ENTENTE. THE FAILURE OF THESE EFFORTS WAS FOLLOWED BY VON BEIHMANN-HOLLWEG'S PUBLIC PEACE PROPOSAL

THE WORLD'S WORK

JANUARY, 1917

VOLUME XXXIII



NUMBER 3

THE MARCH OF EVENTS

THE sentiment for universal military training has been of reluctant growth in this country, but it seems now to have taken hold upon the convictions of the American people. They long fostered a noble aspiration for perpetual peace—an inspiration based not upon fear or slothfulness or creature comfort, but upon a profound conviction of the wickedness and the futility of war. And so benign had been their intentions toward the rest of the world that they had come to assume that the United States was outside the range of foreign envy or malice.

The dream has been shattered. The vastest war and one of the most ferocious in history has destroyed the illusion of a permanent peace of altruism. And instead of finding the benignancy of our intentions a bar to hostility abroad, we have found ourselves on every hand confronted by short-tempered nations whose speech to us has been as sharp as the limits of prudence would permit.

We have taken the hint, and, relaxing no whit our benevolence of purpose, we have gone half way toward assuring that we shall so far arm ourselves as to guarantee that we shall be strong enough to be left alone to pursue our peaceful way. Presi-

dent Wilson knew the history and the temper of the American people well enough to know that they believed by inheritance in a strong navy and a weak army; and he got the means of defense they would most quickly agree to—he got for the navy the most prodigious appropriation in its history.

Now the people see the need of a strong army as well. If it is not to become the instrument of oppression which history has taught them to dread, it must be a democratic army—and that means universal military training. It does not mean the continental system of long-term service. Least of all does it mean the erection of another unspeakable Prussian hereditary class of military egotists, or the more romantic but scarcely less repugnant military caste of the professional British army before the war. What is wanted in this country is a training in the use of arms and the usages of war as brief as the Australian or the Swiss, and an organization as democratic as the French, where officers and men are simply fellow-citizens in a common service of defense. More than this will not be tolerated by the great body of American people: less than this will not be enough to guarantee the Nation's safety.



EMPEROR CHARLES FRANCIS OF AUSTRIA-HUNGARY

AFTER A REIGN OF NEARLY SIXTY-EIGHT YEARS—THE THIRD LONGEST IN HISTORY—EMPEROR FRANCIS JOSEPH, OF AUSTRIA-HUNGARY, DIED ON NOVEMBER 21ST AND WAS SUCCEEDED BY HIS GRAND-NEPHEW, ARCHDUKE CHARLES FRANCIS



ADMIRAL SIR JOHN JELlicOE

WHOSE RECENT APPOINTMENT AS FIRST SEA LORD OF THE ADMIRALTY OF GREAT BRITAIN MEETS THE POPULAR DEMAND THAT THE DIRECTION OF THE FLEETS BE PLACED IN THE HANDS OF OFFICERS WHO HAVE TAKEN AN ACTIVE PART IN MODERN NAVAL WARFARE



MR. HIRAM W. JOHNSON

THE PROGRESSIVE GOVERNOR OF CALIFORNIA WHO, SIX YEARS AGO, LED HIS STATE'S REVOLT AGAINST THE POLITICAL DOMINATION OF THE SOUTHERN PACIFIC RAILROAD, AND WHO WAS RECENTLY ELECTED UNITED STATES SENATOR FROM CALIFORNIA BY A MAJORITY OF 270,000

(See page 289)



Y. M. C. A. WORK AT THE MEXICAN BORDER

Since the concentration of the national guardsmen on the Mexican border last June, the Army and Navy Department of the International Committee of Young Men's Christian Associations has constructed spacious wooden buildings at various points of concentration, which are used by the soldiers as clubs, meeting places, and for religious services of all denominations. Evening programmes are arranged for the edification, instruction, and entertainment of the men, such as religious services, "talks" on moral living, motion picture shows, and entertainments by the men themselves. Work of a similar nature is done by Y. M. C. A. secretaries who, in automobile trucks loaded with supplies of books, magazines, games, and writing material, visit the detachments of troops scattered throughout the lonely Big Bend district, as well as General Pershing's column in Mexico. Forty-one buildings have been built along the border. An average of 1,500 letters written by the soldiers have been mailed from each building every day.

(See "The March of Events")

THE KAISER ON PEACE

THE German Government that prepared for and precipitated war to impose its military autocracy upon Europe realizes that its great scheme has failed for the present and the Chancellor announces to the world that Germany is ready to cease the effort for the time being.

The *Nueste Nachrichten*, of Leipzig, puts the situation plainly:

"Let us honestly admit that we have deceived ourselves in many things; that the course of the war has been full of surprises. France has conducted herself in a manner contrary to anything that was expected of her. Russia, too, has developed far greater internal strength than she had been credited with having.

"However, it was England who showed the world a new face altogether. Her adoption of military service—an unexampled sacrifice of English principles—her organization, her munitions output, and many other things have shown that in the British people there still flows some Germanic blood, and that England is not far behind us in endurance, in valor, and in the will to sacrifice."

In other words, the German mistake was that Europe was not so easily subdued as expected. The only regret about the raid on civilization is that it did not work. There is nothing in the present German attitude to show that there will be any change in the spirit of the German Government that will make it safe to trust either its word, its treaties, its concepts of humanity, or its peaceful intentions.

Until there is a change in the German Government or the Entente Allies reduce Germany to a point where further wars of aggression on her part are impossible, at least for a long time, any peace is a direct menace to liberal and democratic civilization, and those American committees and other agencies which urge such a peace are working against all the principles upon which this nation was founded and for which the Revolution and the Civil War were fought.

For some months the Germans have been making every effort to arrange a sep-

arate peace with Russia, with France, and with Great Britain. Russia's answer was the ousting of Premier Stürmer, the triumph of the Czar and the liberal party, and the appointment of Premier Trepov who represents the pure Russian party without any German tinge and who is committed to the prosecution of the war to victory. In France the answer to the German endeavors is a reorganization of the army to carry on the war more vigorously. In England the cabinet has been reorganized for the same end.

The Allies know that the existence of liberalism and democracy in Europe depends upon their success in this war or in the democratization of Germany from within. There is no sign of this democratization. The Hohenzollern autocracy cannot be trusted. The Allies know that any peace made with the present German Government is merely a truce with another Napoleon.

What price is the world willing to pay for a truce with Germany?

The phrase "the world" is used advisedly, for the United States should understand perfectly that it will pay part of the price.

That price, as suggested in Von Bethmann-Hollweg's speech, is so high that it amounts to the confiscation of liberty. It is not merely that it is too high in terms of territory—it is too high in terms of morals and the future safety of the world. For one thing, it involves another war and the death of France, the first home of republicanism and the centre of liberalism in Europe. It leaves Germany unpurged of its heresies of militarism, conscienceless diplomacy, heartless warfare, and world domination. It leaves every issue that provoked the present conflict as acute as it was in 1914.

The fundamental trouble with Germany's proposal of peace is that it is the Kaiser who made it, for as long as the Hohenzollern autocracy rules a strong Germany the world will know no more of peace than it did when Napoleon, as autocrat, ruled a strong France. The spread of autocracy or the spread of democracy is the fundamental issue of the war.

AMERICAN MOVEMENTS FOR
PEACE

ALL through the Civil War certain elements in the Northern states were constantly making appeals for peace. They held public meetings and "peace conferences" and, with great ceremony, used to raise "peace flags"—their purpose being to end the war under any possible conditions. Their most pestiferous spokesman was Horace Greeley, who pictured Lincoln in his newspaper as a tyrant lusting for human blood and opposed his renomination for the Presidency in the interest of any candidate who would end the war and stop the prevailing slaughter. These people saw, what was sadly true, that the American people, both north and south, were shedding the blood of their finest citizens—and they did not see beyond that fact. That there might be worse things than bloodshed was a conception that apparently did not penetrate their consciousness. That the cessation of hostilities, with the great issues of the war left undecided, and certain, at a future date, to plunge the Nation into a still more dreadful war, would be a greater evil than the existing situation—this was a truth that Greeley and his associates did not grasp.

The type of mind so active in our great national crisis is busy at work to-day. The movement for ending the European War has had a new spurt of life in the last few weeks. An American committee has been organized to push this issue. The membership of this committee contains a list of names familiar to newspaper readers. Many of them are men and women who, in their respective fields, have rendered important public services. In the last three years, however, these names have been chiefly associated with one cause. They represent pacifism in its extreme form. They are the same people who have fought practically every attempt to improve our national defenses. They have appeared before Congressional committees, opposing all plans to increase our army and to build new battleships. They have sought spectacular interviews with the President for the purpose of ad-

vertising these same antagonisms. One of the most conspicuous, at the recent session of Congress, advocated the reduction of our standing army to the 25,000 of twenty years ago and the reduction of the navy to the proportions that existed before the Spanish War. These incidents fairly reflect the "quality of thought," to use a Christian Science phrase, that is now bringing pressure upon President Wilson to use all the powers of his office to end the European War.

As already said, this type of mind flourishes perennially. It has made its presence felt in every world crisis. It sought to end the American Revolution even at the cost of the resumption of British allegiance. It sought to end the Napoleonic wars even at the cost of leaving Europe under the heel of the Corsican. Had Cromwell listened to such advice, England would have remained for another century in the grip of the Stuarts. Had the Greeks of the time of Xerxes followed their "peace-at-any-price" advocates, Greek civilization would have been destroyed by the barbarians. Let us find illustrations in more recent times. Up to August, 1914, both England and France had to struggle against numerous writers and orators who were preaching precisely the doctrines now prevalent in this country. Every battleship England obtained she obtained in face of the fiercest opposition from this source. Patriotic Frenchmen met the most discouraging opposition in their efforts to obtain the three-years' military service law—without which law the Germans would probably have won the Battle of the Marne. Indeed, had England and France followed the advice of their pacifists a Hohenzollern Prince might long since have been crowned in Westminster Abbey and the French Republic might now be a province of the German Empire.

Fortunately, such people, unless the whole nation is decadent, do not make history—but they can make infinite mischief. They are making mischief in the United States now. The pressure they are bringing to bear upon President Wilson may accomplish great harm. It can have no influence in ending the war, for the war will not be ended until the aims

for which it is being fought are attained. But it can do the United States great injury with its fellow democracies on the other side of the sea.

A NEW SPIRIT OF NATIONALISM

THE second session of the Sixty-fourth Congress, which has already assembled, has work before it of a highly constructive nature. This Congress, in its first session, did many things that will make it historic; especially it laid the foundations of a new American Navy that will probably grow into one of our greatest sources of national pride. In others respects the Congress showed symptoms fairly alarming to Americans who have a real patriotic devotion to their country. It surrendered constantly to the temptations offered by an impending Presidential campaign. It displayed that spirit of localism in much of its legislation, particularly that affecting the Army, which many regard as the greatest vice of our democracy. It cringed abjectly while a small minority of the American people—the four railroad brotherhoods—leveled a pistol at its head and demanded preferential treatment in the matter of wage legislation.

The second session meets when no Presidential election hangs over its head—at a moment, too, of a great popular triumph for the political party that controls its majority. The fate of all its members—the absorbing question of whether or not they will return next fall—has been decided. The necessity has thus passed for political manœuvring. The Congressmen can now legislate as American citizens, with an eye solely to the Nation's good. What it needs mostly is this impetus of Americanism. The most pressing question before the people to-day is the question of nationalism. In the last three years the American people have been passing through the fiery furnace. We have been asking ourselves questions which we have hitherto regarded it as mere treason to harbor: Is the United States, after all, a nation? Are we a homogeneous nationality or an indiscriminate collection of localities? Are the states incoherent particles, with a

constant tendency to fly apart, or have we the power of united thinking and united action? Does the average American regard Washington as the real capital of his country, or does he find his first allegiance in his county seat? At the last session of Congress a Jeffersonian Senator said that, properly speaking, he was not a citizen of the United States at all, but of the state of Mississippi! To what extent does this attitude represent the ideals of the average American?

The time is coming when this nationalism will be called upon to express itself in tangible ways. Weighty problems, economic and social, are facing the country; problems which, many observers are persuaded, our present loosely knit federal organization cannot handle. The railroad question is fast becoming acute. Can our railroads long remain prosperous when subjected to the wasteful regulation of forty-eight legislatures; would not a strong centralized body at Washington; a magnified Interstate Commerce Commission, perform this duty much more successfully? Again, Congress has already decided that child labor is properly controlled by the central government; but why not the other social questions, such as workmen's compensation, hours and working conditions of labor, industrial insurance, and the like? Our federal militia system has broken down; what agency could more completely unify the American people than a citizen reserve, absolutely under the control of the Washington Government? Our system of federal appropriations, with an executive budget in place of the Pork Barrel—with river and harbor improvements undertaken with the idea of promoting commerce and not the financial profit of districts—must be overhauled. Our foreign policy—which includes Mexico and Central America as well as Europe—needs regulation with an eye to the promotion of American rights and American ideals.

Our greatest inspiration is the promotion of the spirit of Americanism and nationalism. It is the opportunity of the present Congress, in the few months of life that are left to it, that it may rise to the new occasion.

A GLANCE AHEAD

MR. WILSON'S elevation to the Presidency was the result of his own long and conscious training to fit himself to administer that great office and of the long and conscious labor of a group of farsighted and patriotic friends who helped him build up a national reputation by giving publicity to his talents and achievements. On both sides the purpose was a high-minded effort to give practical effect to the political faith which they all held in common. The result was a service to the Nation.

Now that President Wilson has been confirmed in his administration of affairs by reelection, it is time to look forward to the end of his second term, when no President may aspire again to the office, and to prepare a candidate for the Democratic Party to offer as his successor. Whatever one's personal politics may be, no loyal citizen of the United States wishes the Presidency to go by default to either party by reason of the obvious unfitness of the other party's candidate. Hence everybody in the country will welcome the emergence of a man of character, intellect, and experience who shall personify the political faith of the Democratic Party.

In the Republican Party at least two men of this quality already stand out clearly—Colonel Roosevelt and Mr. Hiram W. Johnson. They may be too radical to suit a large conservative section of the party, but at the worst they would be acceptable even to them. So the problem is not pressing with the Republicans.

But it is a pressing problem with the Democrats. A half dozen men in the party might be named who have shown that they possess character and intellect of a high order, and they have now had a broadening political experience. But no one of them has so challenged the imagination of the country as Mr. Wilson challenged it while he was governor of New Jersey, or as Mr. Johnson has while governor of California.

Here is a real need and a real opportunity for public service. Patriotic citizens the country over can be useful to the Nation by giving thought to the bringing out of

the talents of men fit for the highest office in the Government and the creating of a national acquaintance with these men.

A MOMENTOUS REPORT

THE French Government is urging the people of France to practise deposit banking in order to 'mobilize the national cash,' i. e., to draw it out of French stockings into French banks. The Bank of France is distributing a pamphlet of explanation and instruction in the American system."

These interesting sentences are taken from a paper recently issued on "The Rate of Interest After the War," by Prof. Irving Fisher. Probably it will be a surprise to most Americans to learn that our matter-of-course habit of putting our money in a bank and checking against it is so much a novelty in France. But the importance of the French Government's efforts to introduce the custom there lies in the dramatic evidence it offers of the readiness of modern nations to adopt or adapt one another's ideas. Another evidence of this internationalism of ideas is recorded by Mr. James Keeley, the editor of the *Chicago Herald*, who recently wrote from England that he had found American shop management and American principles of factory production applied in the manufacture of munitions all through England and Scotland.

But to Americans perhaps the most momentous example is contained in the report issued on December 2d by the Federal Trade Commission in response to a resolution of the United States Senate asking for a plan by which American manufacturers might cooperate in the sale of American goods abroad. The Commission recommends that Congress legalize the formation of "export trusts" to buy raw materials and sell finished products collectively in foreign markets. This is practically a recommendation that we adopt the underlying principle of the German "cartels" which were so effective in building Germany's foreign trade.

Of course, there is a difference, and a fundamental one. The German Government was willing to tax the country in order

to create a big foreign trade quickly, and for that purpose not only authorized these trusts to sell abroad for less than the cost of production at home and to make up the difference by charging Germans a correspondingly higher price; the Government encouraged the practice and in some cases directed that it be followed. No such law is intended by the Federal Trade Commission, and probably no such law could be passed by Congress in the present sound state of public opinion. What is desirable is that our shippers should be able to reduce the cost of selling their goods abroad by combining to pay for joint selling agencies that shall be big enough and competent enough to do our business on a large scale at a price that is not prohibitive to any one concern in the combination. Another great advantage in this widening of the market for American goods lies in the fact that business depressions rarely affect all the world at the same time, and therefore, if American goods cannot be sold in America on account of hard times, they could be sold in China or South America or Russia if we had built up steady markets there. By this means our factories could be kept going almost regardless of domestic conditions; and inversely, by reason of this independence of domestic influences, they would tend to prevent those conditions from becoming bad.

OUR REVIVING MERCHANT MARINE

THE enormous possibilities of our export trade are clearly revealed by the statistics printed in the Federal Trade Commission's report on export trusts. Of course, the increase in the interchange of goods between the United States and Great Britain (including Canada) to almost $2\frac{1}{2}$ billion dollars in the first ten months of 1916—practically double the highest previous record—is a product of the artificial conditions created by the war. The same is true of the great increase in our trade with Cuba, South America, and Australia, but here we are much more likely to hold what we have gained. What we are sending these latter

countries is largely goods for the normal uses of peace which cannot be got from Great Britain and Germany because the British are absorbed in munition-making and the Germans are cut off from the world. If our products are as satisfactory as they ought to be, they will continue to be desired by many people in those markets to whom they were first introduced under the abnormal trade conditions that have existed during the last two years.

The same necessities that have made us a gift of a big foreign trade are making us a gift of a merchant marine as well. A distinguished American of wide experience remarked not long ago that ships were so scarce and sea freights so high that the man who owned any kind of vessel that was capable of making an ocean voyage could earn the entire cost of it in profits on one voyage, and a fortune on the second. His striking phrase is corroborated by the intense activity of American shipyards. The building of vessels is going forward in this country at a rate that has not been approached since the days when Yankee clipper ships were in every harbor of the world. Some of these vessels are being built for foreign governments, but many of them are for American firms and will carry American trade. New lines to South America, both on the Atlantic and the Pacific, are in operation, and others have been announced.

This revival of American shipping and of American trade properly go hand in hand. The ideal condition of our commercial life would be that American raw materials should be fabricated into highly finished products in American factories by skilled and well paid American laborers, and, after the home market had been supplied at a reasonable profit, the surplus product should be shipped abroad in American-built and American-owned vessels and exchanged for raw materials that are not native to this country (such as rubber, for example) or for finished goods that cannot be produced here because of their distinctive style or because they can naturally be made more economically in some other country. Under such an ideal arrangement, every profit that could be made on native products would be made by Ameri-

cans, while our national purchasing power would be correspondingly increased and we should be able in consequence to buy more from the countries to which we wish to sell, thus in turn adding to their power to buy from us.

A radical advance toward this ideal is being made by this country right now. The war is our opportunity, and how much of this easily won position we shall hold when it is finished depends entirely on the degree to which we can continue to be more serviceable to the world than other nations will be. Everything that can be done by the Government to encourage American manufacturers and ship owners should be done—not by subsidy nor by cinching the home consumer for the empty glory of a home-bought foreign trade, but by laws like those proposed by the Federal Trade Commission to permit collective selling agencies abroad, and by such laws as that which made possible the creation of foreign branches of national banks.

Y. M. C. A. WORK AT THE BORDER

THE national guardsmen had hardly arrived at the border last July when the construction of buildings for the use of the men in their hours off duty was begun by the Army and Navy Department of the International Committee of Young Men's Christian Associations. These are roomy, wooden structures containing tables and chairs and long desks used in writing letters, writing material being supplied free to the soldiers. The buildings serve as clubs for the men, and programmes are arranged for every night of the week—on one night it is a heart-to-heart talk on the necessity and virtue of clean moral living; on another evening it is a religious service (all religions are represented); on another, an impromptu entertainment given by the soldiers themselves. Each building contains a phonograph and forty or fifty records, games, a small folding organ, and a library, of about one hundred volumes, the latter made possible by a \$15,000 contribution from the Rockefeller Foundation and the coöperation of the New York Public Library in assembling

the books. Approximately 5,000 volumes have thus been supplied. Publishers have also helped by donations of books and magazines; and the officers in many of the regiments have contributed to a fund which pays for the use of pianos in many of the buildings. Up to December 1st, forty-one buildings had been constructed, and the extent to which they are used is indicated by the average of 1,500 letters mailed every day from each building.

The detachments of troops scattered throughout the Big Bend district are visited by a traveling Y. M. C. A. secretary. Most of these detachments are located at great distances from the railroad, and the life of the men is very lonesome and monotonous. The secretary makes his rounds in an automobile truck, leaving books and magazines, writing material, and phonograph records at each camp. "Talks" are given in the evening and a portable motion picture apparatus furnishes entertainment. General Pershing's column in Mexico has also been served in this way.

The cost of this work up to December 1st was about \$250,000. The Rockefeller Foundation's total contribution to defray this cost was \$50,000, and the balance represents the gifts of many individual contributors.

"ON TO WASHINGTON!"—THE PROHIBITION CRY

IN VIEW of the political dominance of the South and West, as established in the recent election, the nation-wide prohibition issue against alcohol takes on a new significance.

Draw a map of the states that re-elected President Wilson and then place beside it a similar map showing the states that now have the prohibitory law. These two exhibits suggest certain startling possibilities. Though in spots the maps show variations—Wyoming, Utah, California, and Texas are not yet prohibition—in their essentials they are the same. Thus the South is almost as solid against alcohol as it is solid against the Republican Party. Prohibition has swept the territory west of the Mississippi to a degree that can be compared only with the success

of the Democratic candidate. New England has one solitary state—New Hampshire—that voted for Mr. Wilson; likewise it has one solitary state, Maine, that flies the anti-alcohol banner. The great populous Eastern states that have always, since the Civil War, determined Presidential elections—New York, Pennsylvania, Indiana, Illinois—are now strongholds of Republicanism, and they also stand out stalwartly against the prohibition crusade. Of the four states that adopted prohibition in November, two—Nebraska and Montana—also cast their electoral votes for the Democratic candidate. In Missouri the battle was so close that only the brewery-ridden town of St. Louis saved the day for alcohol.

By force of circumstances, therefore, the Democratic Party must now add another issue to its fighting strength. Mr. Bryan himself, its most popular campaign orator, already says that national prohibition will lead all other issues in 1920. By that time the issue may have disappeared, for it is not impossible that the constitutional amendment enforcing national prohibition may have become effective. When, three or four years ago, the Anti-Saloon League raised the cry of a "saloonless nation by 1920" the ambitious programme was generally derided. But consider a few facts: a constitutional amendment requires the ratification of three fourths of the states, that is, thirty-six. At the present moment 85 per cent. of the territory of this nation, comprising 63 per cent. of its people, is under some form of prohibitory law. Twenty-three states have state-wide prohibition. Others will soon place themselves on that side; thus Utah elected a Democratic governor on the Prohibition issue, and the successful Democrat in Florida, the Rev. Sydney J. Catts, defeated his opponent in the primary on the prohibition question. In other states the prohibition cause is gaining so rapidly that it will probably win in the next two or three years. Indeed, if the teetotalers make as much progress in the next quadrennium as they have in the last, they may easily have the thirty-six state votes needed to place 100,000,000 people under a prohibitory law.

THE ROMANCE OF DESERT SIGN-POSTS

MR. GEORGE W. PARSONS, a mining engineer of Los Angeles, began thirteen years ago an agitation for desert sign-posts to guide lost travelers to water. In 1903, while chairman of the Committee on Mines and Mining of the Los Angeles Chamber of Commerce, he made a trip through the desert country of southeastern California. On one trail followed on that journey he saw the bleached bones of thirty-six men who had died of thirst. That sight fixed in him a resolution that remained steadfast through years of public indifference—that such suffering must and should be made impossible. For years he besieged county boards of supervisors, the state legislature, and the national Congress. He was good-natured, he was tactful; but he would not be denied. He persuaded the Los Angeles Chamber of Commerce to prepare an accurate map of the deserts in California and Nevada, showing the roads, trails, and water holes. He persuaded the state of California to provide sign-posts, and the counties to put them up. And finally, after numerous failures, he persuaded Congress to make a preliminary appropriation and to empower the Secretary of the Interior to "discover, develop, protect, and render more accessible for the benefit of the general public, springs, streams, and water holes on arid public lands of the United States; and in connection therewith to erect and maintain suitable and durable monuments and signboards at proper places and intervals along and near the accustomed lines of travel and over the general area of said desert lands, containing information and directions as to the location and nature of said springs, streams, and water holes, to the end that the same may be more readily traced and found by persons in search or need thereof; also to provide convenient and ready means, apparatus, and appliances by which water may be brought to the earth's surface at said water holes for the use of such persons; also to prepare and distribute suitable maps, reports, and general information relating to said springs, streams,

and water holes, and their specific location with reference to lines of travel."

In addition, Congress provided that it should be a felony to injure or remove these guide-posts or to foul these waters.

The importance of this law is better understood when one realizes that the Mojave and Colorado deserts in California are bigger than many Eastern states, that three fourths of Nevada is a desert, that all of western Arizona and two thirds of the southern part of that state are arid, that large sections of Oregon and Utah are barren—and that all this vast domain is heavily mineralized and increasingly frequented by prospectors and miners. The roll of men who have died the fearful death of thirst has never been compiled, but it would be sadly long. Mr. Parsons's public spirit and unselfish persistence have achieved a humanitarian purpose that will be gratefully acknowledged by thousands of men and beasts.

THE CARE OF 15,000 CRIPPLES

IN FORMER years, after one of the spinal diseases, such as meningitis or infantile paralysis, had visited a community, it was the custom to say that the fortunate ones were those who had died. Statistics furnished by this latest epidemic emphasize this point of view. Up to date there have been 25,000 cases of poliomyelitis—the greatest visitation of the disease recorded in human history. In the experience of New York City, 65 per cent. of the recovered cases showed a "serious paralysis of one or both limbs and are unable to walk," and "19 per cent. were partially paralyzed in the lower limbs although still able to walk." Making deductions for deaths—what were formerly regarded as the happy terminations—this means that the United States has 15,000 crippled children on its hands as a result of a summer's experience.

In past years a spirit of fatalism has accepted these cripples as part of the unavoidable process of Nature; we live in a more fortunate era, however, and medical science refuses to regard the cases as hopeless. In fact, the large majority of these cripples can be restored to normal

childhood and even the more aggravated cases can be greatly improved. Nearly two years ago the state of Vermont developed a system of after-care, which other communities, especially New York, the state that has suffered most severely, are carrying into practice. Briefly the system comprises a traveling clinic under the control of the state board of health. This clinic visits the towns and cities in turn, instructing the family physician in methods of after-care. Nurses visit the homes, supervise the muscular exercises of the children, encourage the families, and keep careful watch so as to assure themselves that the children are receiving the necessary attention.

In New York City a special "Committee on After-Care of Infantile Paralysis Cases" is performing a similar work. As soon as a patient is discharged the Health Department sends a notification and record to this Committee. A nurse immediately visits the home and brings the child to some appropriate agency for treatment. Medical supervision is provided, braces and other appliances are given in cases where the patient's family cannot purchase them, and all means are taken to transform a crippled child into a strong and healthy one.

All this demands money; private donations support the work; the New York Committee, as well as those in other communities, are appealing for support. Certainly few charities pay such positive dividends, for the work, if properly supported, will produce self-sustaining citizens of human beings that might otherwise be a life-long charge upon private and public benevolence. It is certainly hoped, therefore, that the work, so well begun, will not slacken because of the need of that which is a most plentiful article in this country at the present time.

THE DISCOVERER OF FRESH AIR

NEW YORK recently celebrated a new kind of festival—it devoted, under the supervision of the Board of Health, an entire week to the modern fetish of fresh air. "Open-Window Week," the sanitarians called it; and the

ceremonies included, besides seven days' sleeping with open windows, walks *al fresco*, and a study of certain air-borne diseases, such as pneumonia and bronchitis, and the destructive effects of that greatest of cures, fresh air.

We regard this enthusiasm for oxygen as a modern discovery. Certainly we have evidences enough that our ancestors, even the comparatively recent ones, lived a hermetically sealed life. In certain backward parts of the country, "night air" is still superstitiously regarded as the cause of malaria and other diseases. But there was one famous American of the eighteenth century who was not led astray by these absurdities. The more we learn of Ben Franklin, the more we learn that he was one of ourselves. No man's life was more misplaced in the matter of time. He belonged to the era of skyscrapers, electric trains, telephones, and microbes. Here, for example, is a letter he wrote in 1773—a letter that the New York Board of Health might appropriately have used as educational matter in its recent campaign for fresh air:

The gentry of England are remarkably afraid of moisture and of air; but seamen, who live in perpetually moist air, are always healthy if they have good provisions. . . . I have long thought that mere moist air has no ill effect on the constitution. But we abound in absurdity and inconsistency. Thus, though it is generally agreed that taking the air is a good thing, yet what caution against air! what stopping of crevices! what wrapping up in warm clothes, what shutting of doors and windows, even in the midst of summer! Many London families go out once a day to take the air, three or four persons in a coach, one perhaps sick; these go three or four miles, or as many turns in Hyde Park, with the glasses both up close, all breathing, over and over again, the same air they brought out of town with them in the coach, with the least change possible and rendered worse and worse every moment; and this they call "taking the air!" From many years' observation on myself and others, I am persuaded we are on a wrong scent in supposing moist or cold air the cause of that disorder we call a "cold." Some unknown quantity in the air may sometimes produce cold, as in the "influenza," but generally, I apprehend, they are the effects of too full living in proportion to our exercise.

THE BELGIAN DEPORTATIONS

AMERICAN sentiment will support President Wilson in any representation he may make to Germany on the deportation of Belgians. Opinions differ as to whether the United States should have protested against the original invasion; in any event that is past history. But the latest German crime not only challenges humane sentiment everywhere; it is perhaps the most atrocious manifestation yet offered an indignant world of the autocratic as opposed to the democratic spirit.

Germany has perpetrated about every conceivable crime against this devoted people. In the first place she swept over the land, in the early days of the war, massacring, pillaging, burning. In spite of her own solemn promise, she seized the Belgian soil. At present the Kaiser holds practically all of Belgium, the Belgian king and government being in exile. After seizing the land, the Germans, by means of forced loans, robbed the country of all its money. Then the Kaiser appropriated all the nation's food supplies, taking it to Germany to feed the German armies, driving away the Belgian cows to provide milk for German babies. Thus the land has been picked like a bone; had it not been for foreign aid, the Belgians must have starved. Apparently there was nothing left. German efficiency, however, discovered one remaining asset in the Belgians themselves. These men had their brains and muscles, a little enfeebled, it might be, by two years of German rule, but still useful in the work of strengthening the German armies. These men could be used to work in factories, mines, in industrial plants; in this way the Germans left behind to do the work could be sent to the front to supply the rapidly growing gaps in the German armies.

The one good result that the Belgian deportations have accomplished is that they have given us a monstrous illustration of the real question at stake in this struggle. Mr. Wilson will have behind him an undivided nation in expressing, in no doubtful terms, the American people's stand on this issue.

INVESTMENT IN "PUBLIC UTILITIES"

Every month the WORLD'S WORK publishes in this part of the magazine an article on experiences with investments and lessons to be drawn therefrom.

IN WRITING not long ago to a man who had sent in a list of his investments for critical examination, the editor of this department made certain suggestions that led subsequently to a discussion of public utility securities along somewhat unusual lines.

The aggregate of this man's holdings represented an amount of surplus capital about equal to that commonly credited to "the average investor." But in two particulars his list revealed him as differing rather noticeably from that hypothetical person who is assumed to set the standards for safe and profitable investment practice. It was not only of exceptionally high average quality, but it had apparently been made up with more than the usual regard for the law of compensation, or with a special view to keeping the realizable value of the securities, as a whole, as nearly as possible uniform at all times.

In his effort to attain this object, the man had varied his selections well—in fact, in such a way that, as they stood at the time of his inquiry, the losses on those which had declined in market value were a little more than covered by the profits on those which showed appreciation. He had failed, however, to include in his scheme of diversification a single utility security of any kind, and in that sense his experience had been somewhat unusual.

It seemed pertinent, therefore, to call his attention in a general way to the records showing the satisfaction which discriminating selections of such securities have given investors of all classes, during the last decade in particular; and to the strong investment position now occupied by the best issues that come under the public utility category.

To this the man replied that he thought the point well taken; that he had, in fact, considered utilities to some extent on

previous occasions; but that he had experienced difficulty in learning "discrimination" in that field of investment. He said that before entering a new field it had always been his practice to acquaint himself with it sufficiently to feel that he could rely, at least partly, upon his own judgment in singling out the "best" securities for a standard of comparison, if not with the intention of confining his purchases entirely to issues of that quality.

"I suspect," he said, "that you will tell me to turn my 'discrimination' on my banker, and let it go at that—excellent advice, no doubt, but can you not help me to be more independent? For example, I began to buy railroad bonds when it was the fashion for the 'conservative' investor to confine himself to such securities of that category as met the legal savings bank requirements of New York and one or two other Eastern states. I have bought railroad bonds of lower grade, but in every instance I have been able to tell pretty accurately wherein they fell short of being the 'best,' and I have felt reasonably sure about what to expect of them. If there is a savings bank standard for public utility bonds, it is with that I should prefer to make a beginning. Is there?"

To be sure, a number of the laws defining the powers and restrictions of the savings banks in respect to their investments make specific mention of public utility bonds. Such laws are found for the most part among the New England states. Nearly all of them, however, are narrow in their scope as far as utilities are concerned, having been designed to legalize certain bonds of this class largely for local reasons.

Massachusetts, for example, provides for the legalization of only two classes of utility securities, namely, bonds of "any street railway company incorporated in the Commonwealth, the railway of which

is located wholly or in part therein," and bonds of "any telephone company . . . of which a majority of the directors are residents of the Commonwealth."

Connecticut makes similar provision for legalizing street railway bonds; broadens its provision in respect to telephone bonds to include issues of companies "incorporated in any of the New England states, or in the state of New York"; and adds a provision respecting bonds of water companies incorporated in the state, and "supplying water for domestic use to communities in the state having populations of not less than 50,000."

Maine provides for the legalization of bonds of street railroads in a few states besides those comprising New England proper; extends the provision respecting water bonds to include issues of companies anywhere in the New England states; and goes a step farther in one direction by providing, under restrictions, for bonds of "any corporation other than railroads and water companies incorporated under the authority of this state and actually conducting in the state the business for which such corporation was created."

Rhode Island's law is broadest in its scope, providing as it does for public service securities as a class, including "mortgage bonds issued by any electric railroad, street railway, gas company, electric light or power company, or water company," the property of which shall be located "principally in the United States, unless otherwise provided"—the important "otherwise" providing for bonds of Canadian corporations.

But aside from whatever other shortcomings these provisions of the laws may have, one studies them in vain to discover adequate and uniform specifications to which public utility bonds should be required to conform to establish themselves as proper media for the investment of savings bank funds.

That such a standard has not been established heretofore may be explained by the fact that for the utilities themselves the period of "growing pains" has been

prolonged. They are not yet out of it. There has accordingly been a characteristic lack of uniformity in their behavior—in their methods of operation and accounting—and by the same token a lack of uniformity in their discipline—in the practices of the various commissions under whose jurisdictions they have been compelled by law to operate.

However, sufficient progress toward uniformity in these respects has been made during the last few years to encourage the more experienced and better informed bankers to undertake the task of opening the way for the safe introduction of public utility bonds to savings bank investment generally. The public service corporation committee of the Investment Bankers' Association has, for example, made certain tentative proposals looking to that end. Without referring here to the reasoning by which these proposals have been arrived at, the fundamental ones may be summarized briefly as follow:

To be eligible for savings bank investment, such securities should be,

(1) Those of companies furnishing artificial gas, electric light and power, local transportation and telephone and telegraph service located within the United States.

(2) First mortgage bonds, refunding bonds representing a substantial investment in excess of underlying bonds whose retirement is provided, or bonds secured by first mortgage bonds of operating properties.

(3) Those of companies operating in those states which have public service commissions with jurisdiction over rates and requiring certificates of public convenience and necessity as safeguards against franchise difficulties.

(4) Those of companies having at least \$500,000 gross earnings, except that in the case of telephone companies gross earnings of at least \$1,500,000 should be required.

(5) Those of companies showing annual net earnings equal to one and three quarter times interest charges for three years next preceding investment, and gross earnings equal to four times fixed charges for one year next preceding investment.

These proposals are made as suggestions to stimulate further thought and study, rather than as definite recommendations.

Paying Off the Mortgage on the United States

HOW WE GOT FIVE BILLIONS DEEP IN EUROPE'S DEBT

MR. ROBERT FLEMING AND THE OTHER HEADS OF BRITISH "INVESTMENT TRUSTS" THAT LENT US THE MONEY TO BUILD OUR RAILROADS—HOW MR. SCHIFF OPENED THE FRENCH "STOCKING TREASURY" TO AMERICAN FINANCIERS—GERMANY AND HOLLAND'S SHARE IN OUR DEVELOPMENT—A CENTURY OF BORROWING

BY

ALBERT W. ATWOOD

NEXT to carrying on the war itself, a bigger financial job has never been undertaken than paying off the debt which the United States owes to Europe. In two or three years we are discharging a four or five billion dollar mortgage that took more than a century to create. This debt was the price we paid to finance the railroad and industrial growth of this continent, the most gigantic investment in history. In a sense it was the Old World's greatest gift to the New.

Go to the bankers and economists and ask them how and why Europe invested so many billions of capital in this country and they will tell you that the motive of home and foreign investment is the same, namely, profit. The word "foreign," they say, has a glamor which blinds the eye to the fundamental likeness of foreign and home investments, and that political boundaries do not obstruct the operation of economic law.

"The motive is acquisitiveness," is the way one banker expressed it. "This motive, and this only, forced the surplus capital of Europe, and Great Britain especially, to these shores, as necessity is forcing it back. Europe had the capital and we had the stocks and bonds. That is all there is to it. It is nothing but the economic force of action and reaction. Foreigners bought when our stocks were cheap and tried to sell when they were dear. There has been no altruism involved, but as an absolutely necessary consequence a tremendous development of this country has followed."

"It is solely a question of whether you

can invest at home," was the viewpoint of another banker. "England and France are old countries, long settled. All the waste spots have been irrigated, all the railroads built. They talk about the wealth of this country, but there is no investment fund, or at least there is just beginning to be one. We make a great deal of money, as they say, but it is all lapped up right here. We have only compulsory investment. That is, as fast as a manufacturer or public utility manager makes a profit he must figure ahead at least five years on the growth of population and provide for the future, which means all the capital he has earned and still more.

"You hear talk these days about Canada being so rich. But if ever there was a nation hungry and thirsty for capital it is Canada, and we are only a little more grown up than Canada."

All of which is both true and fundamental. But it does not tell the whole story any more than describing a genius by saying he is a male biped, five feet seven inches high, and weighs a hundred

and fifty pounds. The story of how Europe financed the material development of this country is shot through with romance and personality. It has chapter upon chapter of stirring endeavor. It breathes the spirit of empire-building and across its pages march the figures of the builders. Directing the flow of foreign capital to these shores has been the task of many men, big, live human beings. Some have been great constructive geniuses. Others have been shrewd, astute, diplomatic, full of finesse. Every type of promoter, financier, banker, and railroad builder has played a part, from the highest to the lowest.

In the main it will do to say that ever since Colonial Days, and especially since the War of 1812 right down to the war that started in 1914, British and Continental capital has streamed to this country. But such a general statement makes no account of the waves and eddies and cross currents. It leaves out of reckoning panics, failures, receiverships, reorganizations, high finance, graft, corruption, changing political and international relations, "free silver," the Civil War, the Boer War, the Venezuela affair, and the alternating waves of American depression and prosperity. Above all it leaves out of the story a century of tremendous human effort.

BRITAIN THE BIGGEST LENDER

Whatever may be the feelings, opinions, and sentiments of the American people toward foreign nations, there can be no denying the chief part which Britain has played in supplying this country with funds. It is British capital, first and in most abundance, that created the vast railroad system without which the North American continent would be of slight importance. Identity of race and language, despite political disagreements, has always been an encouraging element.

"They could read our bonds," was the terse way one authority put it, "printed in the same language, the one they spoke and understood, and for the same reason they could read the reports and all the rest of the printed matter."

London and New York have long been

almost a single financial centre. Close and ample cable relations are partly responsible. London has been a free market for capital with no vexatious stock exchange restrictions and taxation upon the listing of foreign securities. British capital has flowed into this country through a thousand channels. When the war broke out London owned \$60,000,000 of New York City short-term paper, "revenue warrants," by no means an unprecedented or unusually large amount of a single American investment for the London banks to hold. For years it had been the custom for the surplus bank credits of London to flow in and out of American securities in huge amounts. These were like tides and waves, seasonal, monthly, almost weekly.

LENDERS, NOT MANAGERS

It has been said that Englishmen fling their capital "heedlessly abroad." Wealth has long been concentrated in England. It is inherited, and "living on one's income" has been the custom of a relatively small part of the population for generations. As long as they see the promise of a good return they care little where the capital goes, into what country or into whose hands it falls. English investors are thus not in the strict sense "business men." They have never sought to manage the enterprises into which their long accumulated savings have poured. They are rarely even silent partners. They are solely investors. They take a hand only when profits vanish and things go wrong, and then reluctantly.

These statements have their exceptions, but as generalizations are both true and important. For though England has very few multi-millionaires like our Rockefellers, Carnegies, and Morgans, it has a group of upper classes whose compact, aggregate wealth is of incredible extent. These are the riches which have streamed to every quarter of the globe (five billions of dollars to Latin America alone) and whose owners for the most part have neither the inheritance and training or the disposition to take any further part in the process.

The case of James J. Hill is most strik-

ingly illustrative. Through his Bank of Montreal connections, especially Lord Strathcona and Lord Mount Stephen, he opened up vast sluices from British pocketbooks to American railroads, and the stockholders' list of the Great Northern Railway looked like Burke's Peerage. At all times there were literally dozens of high personages in England, even, it was persistently rumored, King Edward himself, who would follow blindly any investment suggestion of the great empire builder.

THEIR "INVESTMENT TRUSTS"

Naturally, if the foreign investments of the United Kingdom had been directed mainly by the individual investors themselves the catastrophe would have been inconceivable in its proportions. But of course such has not been the case. Scottish and English funds have gone into overseas openings largely through the medium of "investment trusts," essentially cooperative institutions the like of which are wholly unknown in this country.

At the head of these investment trusts, of which there are perhaps thirty important enough to have their share capital quoted in the financial publications, are chairmen drawn from the ranks of bankers and financiers of the first order of ability. These men and the bankers with whom they are associated are the guardians of British capital abroad, which surely needs the most watchful care when one considers that on the London Stock Exchange alone some ten thousand different securities are quoted, including such far distant and strange sounding ones as Harbor Board Mortgages of Oamaru and Wanganui, Siam Loans, Malacca Rubbers, Singapore Electrics, and São Paulo Match Factories. Over such varied securities the investment trust companies stand guard year after year.

ROBERT FLEMING, MASTER LENDER

Foremost, perhaps, among these investment trust chairmen and the unique illustration of their activities is a Scotsman, Robert Fleming. Indeed, it would be difficult to select among the living trustees and guardians of Britain's wealth

one who has more fully realized the possibilities of the United States. Mr. Fleming has been unconventional, daring, and for the most part far-sighted. His distinctive practice has been to buy low-priced securities, and hang on to them. Probably no investor on the grand scale has ever equaled Mr. Fleming in his persistence in the hunt for low-priced Americans.

There is no way of estimating accurately the grand total of capital which Fleming has directed toward these shores, but his associates say that it would be no injustice to place the sum well in the hundreds of millions. Everywhere Mr. Fleming is recorded as the foremost authority in Europe on American railroad securities. That is what his own associates in the "City" of London think, and it is the opinion likewise of all authorities on this side. For forty years Fleming has been coming to this country every few months and keeping, perhaps, a closer watch upon the railroads in which English funds are invested than any other man. He is chairman of three of these great investment institutions and a director in several more. Six of them, the American Trust Company, British Investment Trust, Investment Trust Corporation, Metropolitan Trust Company, and Mexican Central Railways Securities, represent a total paid in capital of more than \$100,000,000.

A FRIEND OF OUR FINANCIAL GIANTS

Here is one of the most elusive, yet, to the initiated, well known and powerful figures in railroad finance. Mr. Fleming is elusive in the sense that he has long and successfully shunned publicity. He has managed to keep his name out of the English "Who's Who" and the various biographies. He does not figure as a director in American railroads, although there is probably not one in this country which would not welcome him with delight. There is not a banker or railroad builder of the first rank in America who does not know Fleming. He was a friend of J. P. Morgan, Sr., Collis P. Huntington, James J. Hill, E. H. Harriman, and Edwin Hawley. His activities extend so far that to get any idea of their

scope one must go patiently from place to place, for there is no individual or organization in this country that knows them all. He is an independent, a free lance in big finance, and yet on friendly terms with all the "interests."

Like so many other men in the first rank of successful achievement, Mr. Fleming has all the qualities which make for success with a streak of luck thrown in. His good fortune lay in the fact that when he was working for a jute merchant in Dundee as a young man the employer happened to place in his charge certain American investments. Young Fleming was only a bookkeeper but looked after his employer's American securities with such zeal that when the Erie Railroad got into one of its periodical difficulties Fleming was sent over in February, 1876, to consult with the Erie officers and the large American holders of its securities.

From that time on he has been coming to America so frequently that he is as much an American as a British institution. Yet even his closest friends never know exactly when he expects to arrive or depart. He comes for a few days or a few weeks or a few months, interviews countless bankers and railroad presidents, attends the meetings of reorganization committees, and travels thousands of miles minutely inspecting the railroads in which he is interested.

LEAN, DIGNIFIED—AND SCOTTISH

Mr. Fleming is a lean, frock-coated, aristocratic looking Britisher. Wherever he goes in the financial district he is greeted by hosts of friends. If he enters a luncheon club a dozen men rush up to shake hands with him.

"How do you account for his high degree of success in making investments?" was the question put to one of the leading railroad bankers in this country. "He is Scottish and has all the Scottish qualities," was the reply. "That really answers your question. Fleming is wise, intelligent, and analytical. He always buys cheap. He is patient. Above all he is infinitely patient. But when I say he is Scottish I have said it all."

Mr. Fleming is a tremendous traveler

when he comes to this country. It is his business to inspect railroads and he does it thoroughly. He is famous for questions he asks and he never forgets an answer, his memory about the details of American railroad finance for the last forty years being the most uncanny element of his success. American railroad presidents are most cautious when they talk to Fleming, because if he asks a question and they make an unguarded answer he is sure to say:

"Why, last time I was over you told me so-and-so."

"The first time I ever met Fleming," said one railroad president, "was back in the '80's when I was auditor of a road down South. The president, vice-president, and manager were all away, and one morning a tall Scotsman walked in and calmly announced: 'I have come to look over the road,' and Mr. Fleming and I have been looking over roads ever since."

SOME FLEMING FINANCING

To trace Mr. Fleming's connection with the railroads of this country would be almost to write their history. Possibly with the exception of J. P. Morgan the elder he has had more to do with reorganizing American railroads than any other man. His first interest was in the early Erie reorganization, then he took a hand in the Texas & Pacific, and then the Denver & Rio Grande. As early as 1886 he was on the committee which reorganized the East Tennessee, Virginia & Georgia, which later became part of the Southern Railway. He was in the reorganization of the Chicago & Alton, and has been connected with readjustments of the finances of the Ontario & Western, Chesapeake & Ohio, and the Hudson & Manhattan Railroad (McAdoo tunnel).

But the most important activities of Robert Fleming in this country were those connected with the Atchison, Topeka & Santa Fe and the Norfolk & Western railroads. These railroads have been notably successful, and a large part of their present strength is due to the wholeness of the reorganization in which Mr. Fleming had so large a part. When

the Atchison, Topeka & Santa Fe was reorganized in 1895 there was much doubt as to whether it would retain the St. Louis & San Francisco Railroad, whose later failure proved so disastrous. "Fixed charges on the Atchison system would have been increased from \$7,000 to \$9,000 a mile," wrote Mr. Fleming at that time. "Atchison is much stronger without the Frisco."

"TWO RECEIVERSHIPS AT LEAST"

No one has been shorter than Mr. Fleming in disposing of the undesirable American railroad promoter. A very insistent American who tried to raise capital for his railroad in London finally got to a banker who promised to lay the project before Mr. Fleming, but uttered this warning: "You know there is one question that Fleming always asks and it is the first one he will ask you. 'Has your railroad been reorganized yet?' and if you say 'no,' he will not listen any further."

A promoter once cornered Fleming in the corridor of the old Brunswick Hotel in New York City. A railroad president who was passing through was surprised to notice the briefness of the interview. Mr. Fleming waved to him to wait a moment and, when the caller had left, remarked: "That man tried to interest me in his railroad, but he became discouraged when I said I never even consider investing in an American railroad until it has been through at least two receiverships."

Robert Fleming describes himself as a "merchant" rather than a banker, for in England they have not forgotten as quickly as we that nearly every one of the long line of "bankers" who have turned the stream of European capital westward began as clothing or dry-goods merchants. In this way started the Rothschilds, Morgans, Kuhn, Loeb & Co., the Barings, Drexels, Seligmans, and Brown Brothers. For the business of security selling and dealing is, after all, a very new one. It was natural that the merchants who had shipped goods from one country to another, and had handled the funds of manufacturers and customers, should develop into bankers.

With the revolution of modern Society by steam power the greatest task for capital was seen to be the building of steam railroads on the American continent, and it was but logical that the task of gathering up this capital should be entrusted to the wholesale handlers of merchandise, for that had previously been the only business operation which had ever required large masses of capital.

George Peabody, who had been a dry-goods clerk and merchant in New England, opened his great merchant banking house of George Peabody & Co., Later J. S. Morgan & Co., in London in 1837. It was the same year that the Rothschilds sent August Belmont to this country as their representative. The Barings of London had many years before married into the wealthy Bingham family of Philadelphia and had long been interested in the United States.

During his long career in London, Peabody was perhaps the most active man of his time in directing British capital to America, and Junius S. Morgan and his son, J. P. Morgan, Sr., were his lineal descendants. For a long period American investments proved disastrous. Railroad securities, and state bonds sold to build railroads, alike proved failures. Then came the Civil War, which for nearly twenty years almost wholly stopped the flow of English capital to this country. English sympathies were on the losing side and vast sums were sunk in Confederate bonds.

WHEN GERMANS LENT US MILLIONS

But German sympathies were with the North and a billion dollars of United States bonds were held abroad in 1869, mostly in South Germany. German Jew traders had come to America in the early '50's, and their descendants, now among the most powerful international bankers, along with the Rothschilds, had been chiefly instrumental in placing these bonds abroad. These financial operations of the Civil War and the even more striking refunding operations which followed in the late '70's developed many groups of financial magnates in America with close European connections, especially

with the great money market of Frankfort. By 1879 the English had forgotten their dislike of the North enough to resume, on an even greater scale than before, their financing of American railroads. The remarkably successful paying off of the Civil War debt did most to restore confidence, the general feeling being well expressed by Samuel J. Tilden, who, at a dinner given in 1877 to Junius S. Morgan, thanked the guest of honor for "upholding unswayed the honor of America in the tabernacle of the Old World."

Then came the period of English investment in American breweries. These were bought up like wild-fire. In every part of the country consolidations took place, and it was always English money that supplied the sinews. These flotations seemed to have followed the Guinness and Allsopp brewery underwritings in England, from which great fortunes were made and in which English interest was widespread.

Many of the brewery investments turned out badly for England, as did the expensive purchase of real estate mortgages prior to 1893. At one time it was said that the Rothschilds, partly through the English and partly through the French branch, had \$60,000,000 invested in America, including railroad bonds and stocks, mining stocks, mortgages, real estate, and breweries in the cities of Rochester, St. Louis, and Cincinnati.

OUR RAILROADS OWNED ABROAD

J. P. Morgan and W. H. Vanderbilt were instrumental in placing an immense block of New York Central stock in England, said to be \$50,000,000, and when the United States Steel Corporation was formed many years later Morgan sold a great quantity of its stock in London. But in the main, while the English bought all manner and description of American securities, railroad stocks and bonds were what they steadily purchased.

At no time from 1853 to 1898 was a majority of Illinois Central stock held in this country. At one time nearly 90 per cent. was held abroad. In 1900 nearly 25,000 stockholders in this single railroad lived in Great Britain. Between 1890 and 1896 anywhere from 21 per cent. to

75 per cent. of all the stock of such railroads as Illinois Central, Pennsylvania, Louisville & Nashville, Ontario & Western, New York Central, Union Pacific, Northern Pacific, Reading, Baltimore & Ohio, and the Chicago, Milwaukee & St. Paul was owned abroad. At about the same time, the Germans and Dutch owned one half the stock of the Denver & Rio Grande and the English one fourth. Several railroads in the South were owned exclusively by the English, the Alabama Great Southern having only one American director. Almost the same situation held true for a long period of years with regard to the Chicago Great Western.

As a result of their fortunate experience in the Civil War the Germans became large investors in American railroad stocks, but Germany has never sent its capital abroad on the gigantic scale that England has. German operations abroad began at a much later date than those of England and have grown more slowly. Until recently Germany had no large field for placing her funds in colonies, and her overseas trade is quite a recent growth. Consequently Germans were inclined to buy securities in neighboring European countries rather than far afield. Finally, Germany developed so much later than England that every spare mark was needed at home. Being an active, managing people the Germans have always wanted to dominate the enterprises in which they invested, and this has naturally limited their scope as compared with the English.

But despite these facts the Germans have held big blocks of American railroad shares. At one time the Deutsche Bank was the largest owner of Northern Pacific stock and right down to the beginning of the war was also the largest owner of Baltimore & Ohio. For years it has maintained a representative in New York to look after its American investments.

On a smaller scale the Dutch have operated in American rails much like the English. Possibly they have been more reckless in buying stocks, but they suppressed their gambling instincts when it came to bonds. Despite many losses the Dutch have been shrewd buyers

of American stocks. Twenty-five years ago Holland had gradually accumulated a majority of Michigan Central. W. H. Vanderbilt, fearing some antagonistic plot, cabled to inquire why. The reply came: "because price low."

Time and again the Dutch have been in practical control of an American railroad, only to sell out when their judgment in buying low had been confirmed by an advance in price. The Dutch operate almost entirely through so-called "administrations," somewhat similar to the English investment trusts. These issue their own certificates against American securities, collect dividends, vote the stock, and attend to all other details. It is probable that the Dutch still retain the great bulk of their American stocks, whereas the Germans sold most of theirs during the year, and especially the three months, preceding the war, and the English are steadily selling theirs at the present time.

Like Germany, the industrial and financial development of France came at a considerably later date than in England, and sums invested abroad were correspondingly smaller. France never had much shipping and she lost her big colonies in the seventeenth century. Thus the Frenchman has concentrated his purchases in Europe, in Egypt, and the North African colonies. Yet the prodigious thrift of the peasants made of France an enormous reservoir of capital which was not tapped by this country until shortly after the panic of 1907.

Wealth is far more widely distributed in France than in England. In tiny dribblets it pours into the banks, and the bankers do all the investing for the people. More provincial and more ignorant as a class than his English cousin, the French investor has reposed the blindest confidence in his banker. And the French banker has not played fair with his people.

French foreign investments have been either largely government bonds bought for state reasons, or speculative securities which would profit the bankers hugely. No one can say that the political investments were not justified, for if it had not been for French money Russia could

not have built her strategic railroads, which alone have enabled her to stand up against German blows. But when it came to the ordinary American bond or stock it was impossible to stimulate French interest because the commission which had to be paid the Paris banker was far too heavy. Thus failed a tremendous attempt in 1909 to interest the French in United States Steel stock.

Shortly after the panic of 1907 the security markets in this country were paralyzed, practically dead. Even the best of "gilt edged" railroad bonds could not be disposed of either here or in England. Then came that notable triumph of American banking enterprise, the placing of an issue of Pennsylvania Railroad consolidated 4 per cent. bonds in Paris by the firm of Kuhn, Loeb & Co. Thus from the French was won a reluctant victory which galvanized the markets into new life and set flowing once more the streams of credit.

MR. SCHIFF INVADES PARIS

Kuhn, Loeb & Co. was a firm of German origin. Jacob H. Schiff, the senior partner, was born in that centre of world finance of half a century ago, Frankfort. Two of his partners came from the great shipping port of Hamburg and still another had served his apprenticeship in the Deutsche Bank, the inner power of modern German finance. But the firm had for years been fully as active in enlisting the support of British as German capital, and had maintained close relations with Sir Ernest Cassel, who has been called the J. P. Morgan of England, with the London branch of the Rothschilds, and with men like Robert Fleming.

It was natural, therefore, that Kuhn, Loeb & Co., with their unexcelled knowledge of world markets, their sound judgment as bankers, and their initiative, should enter the Paris field as well. The epoch-making Pennsylvania loan was followed by sales to the French of bonds of the Central Pacific, St. Paul, and New Haven railroads. Unfortunately the French did not make their market much more free or liberal than it had been before. They insisted upon "nationalizing" the

American bonds, i. e., changing them over into francs, and thus depriving themselves of the real advantage of having foreign investments, which is to be able to sell them back easily in the time of need.

But the fact remains that the placing of these loans at that particular time constituted the biggest single and individual achievement of enlisting foreign support for American enterprise. In the five years that followed, large blocks of United States Rubber, American Telephone, Utah Copper, Virginia-Carolina Chemical and a few other stocks went to Paris, but since 1911 no very extensive efforts have been made to increase the French market for Americans.

It cannot be said that American financial prestige was enhanced much in the few years which preceded the war. The New Haven, soon after disposing of a large issue of debentures in Paris, went to pieces; and the St. Paul shocked its followers by alleged irregularities in connection with its Pacific Coast extension and by the decline in its stock which followed. Great efforts had been made to arouse foreign interest in the Westinghouse Electric & Manufacturing Company not long before that company went into receivership in the panic of 1907. Just as a large block of a certain high grade investment stock was to be disposed of on the Paris market the price took a tremendous slump in New York; and most calamitous of all was the downfall only a few years ago of three big railroad systems, the Gould group, the "Frisco," and the Rock Island.

There had always been eccentric lone hand promoters who had drawn great sums from Europe, from the time of George Francis Train down. Train was the "Sage of Madison Square," the man who in his old age talked only to children, who went around the world in eighty days, and built the first tramway in England. He had raised sums abroad toward the construction of the Union Pacific and

obtained millions, so it is said, from the Queen of Spain to build a railroad from Erie, Pa., to the Mississippi River.

There were David Moffat with his costly railroad through the Rocky Mountains, Arthur E. Stilwell with his ill-fated Mexico & Orient project, and the Pearson-Farquhar Syndicate, which attempted with the aid of European capital to seize control of six American railroads.

Finally there were sensational adventurers and such a sinister chapter as that of the ill-starred railroad whose securities were absorbed by the confiding French with the aid of an exalted title.

Despite the renewed necessity for foreign assistance after the panic of 1907, a profound change in our financial relations with Europe began to take place about 1898. The prosperity which started in that year and has lasted, with only temporary recessions ever since, has greatly reduced the proportion of European capital in this country. Where from 40 per cent. to 60 per cent. of the stock of many railroads was owned abroad in the early '90's, the prevailing percentage for the large systems when the war broke out ranged from 10 per cent. to 35 per cent. Relatively we were far less dependent upon our foreign cousins in August, 1914, than we had been for generations past.

But absolutely speaking, Europe had an immense stake in our industries in those midsummer days of 1914. Somewhere between three and five billion dollars of American stocks and bonds were owned on the other side of the Atlantic. Would the European nations dump these holdings and smash the markets of the world? Would they not need every available resource to carry on their war? This was the dreadful uncertainty that caused the New York Stock Exchange to close its doors within forty-eight hours of declaration of war and kept it closed for four months. These were the questions that rose like spectres before the financial world of America.

[Mr. Atwood's second article will tell how the United States has paid off its gigantic debt to Europe in the last two years—the conditions that made it possible and the men who did it. His article will reveal, in terms of men and events, the human meaning of the phrase, "The United States is at last a creditor nation."]

SLEEP FOR THE SLEEPLESS

INSOMNIA NOT A DISEASE, BUT OFTEN A BAD MENTAL HABIT—MENTAL HYGIENE AND BODILY HABITS AND THEIR EFFECTS—SOME SIMPLE REMEDIES FOR WAKEFULNESS

BY

CHARLES PHELPS CUSHING

TO MAKE sure that this series of articles shall be authoritative, the *WORLD'S WORK* has arranged to have them reviewed and approved by the Life Extension Institute before they are published.

The Life Extension Institute was organized by well known scientists, publicists, and business men as a semi-philanthropic enterprise to disseminate the knowledge of healthful living among the people. Ex-President Taft is president of the Board of Directors, and its professional advisers include some of America's most distinguished physicians and surgeons, as well as the most prominent educators. The Institute's approval of these articles assures their scientific character.

WITH engaging frankness, the scientist will confess that it is no easy task to furnish adequate definitions either for consciousness or for sleep. The business man, seeking practical information, probably will be equally frank and reply that he can struggle along without the definitions if the scientist will only be good enough to furnish some plain answers to a few simple questions. What does sleep do? How much of it ought he to get? What can he do if he is troubled with insomnia?

The answer to the first of these queries appears to be comparatively easy. "The purposes served by sleep are plain," writes the physiologist, Percy Goldthwait Stiles, of Harvard, in a book on the nervous system. "It is a state in which the local and general losses of the tissues, which have not been fully met as they have taken place, can be offset." Immediately you are made to see that sleep is a matter of tremendous importance. To quote again from the same authority: "It has often been said that sleep is a more imperative necessity than food, and the claim seems well founded." Another observer remarks: "Absolute lack of sleep kills more quickly than lack of food. . . ." One of the most eminent surgeons in America, Dr. George W. Crile, recently reported upon some experiments made with animals: "It has been shown that animals,

subjected to the most favorable conditions, kept from exertion or worry, supplied with plenty of food, and in good hygienic surroundings, do not survive longer than from five to eight days without sleep." The mere maintenance of the conscious state, Dr. Crile discovered, "is at the expense of the brain, the adrenals, and the liver, and these changes are identical with those wrought by exertion, infection, and emotion. The changes wrought by these activators can be repaired only during sleep. Sleep, therefore, is as essential as food and air."

On the face of the early returns this news sounds far from comforting to a person troubled with insomnia. But just a moment, please, before you toss once more in your restless bed and prepare to expire. These facts, hard and cold enough to suit the taste of the most morbid, are followed by other evidence more cheering. The peril that sleeplessness will be the death of you is decidedly remote. The same scientist who conducted the experiments upon the animals and set them down in a book about the mechanism of the human body lays stress upon the point that this mechanism is an adaptive one. To the end of getting enough sleep to preserve existence, the body can adapt itself to appalling difficulties; it can accomplish feats that every-day folk might suppose were impossible.

The European War furnishes some dra-

matic examples. You may recall an interview, not long ago, in which Field Marshal von Hindenburg declared that for the soldier "the main thing is sleep." When you read that the thought must have flashed into your mind, "How can men sleep at all with that never-ending din of battle in their ears?" Recently I took a long journey through Canada and in the course of it asked that question of a number of soldiers, home on leave. They answered to the effect that the body adapts itself to what it has to meet. None of them could recall a case where a soldier had died of sleeplessness. They testified that after the first few days getting asleep was the least of a soldier's worries, though sometimes he found it hard to keep awake.

Now it so happens that the same eminent surgeon who conducted the experiments with the sleepless rabbits has lately been given a chance to take observations in a bigger, vastly more fascinating laboratory. He was put in charge of a unit of the American Ambulance service, Neuilly-sur-Seine. Would you know to what lengths the human body can go to obtain sleep when sleep is imperative? Then hear Dr. Crile's account of what happened in the retreat of the men of the Allied armies from Mons to the Marne—a chapter on "Sleep" from a new book titled, "A Mechanistic View of War and Peace." Certainly few books of medical science, popular or professional, have passages that can compare with this, from the layman's point of view, in interest:

"In this retreat from Mons to the Marne we have an extraordinary human experiment, in which several hundred thousand men secured little sleep during nine days, and in addition made forced marches and fought one of the greatest battles in history.

"How, then, did these men survive nine days apparently without opportunity for sleep? They did an extraordinary thing—they slept while they marched! Sheer fatigue slowed down their pace to a rate that would permit them to sleep while walking. When they halted they fell asleep. They slept in water, and on rough ground, when suffering the pangs of hunger and thirst, and even when severely

wounded. They cared not for capture, not even for death, if only they could sleep.

"The unvaried testimony of the soldiers was that every one at times slept on the march. They passed through villages asleep. When sleep deepened and they began to reel, they were wakened by comrades. They slept in water, on stones, in brush, or in the middle of the road as if they had suddenly fallen in death. With the ever on-coming lines of the enemy no man was safe who dropped out of the ranks, for no matter on what pretext he fell out, sleep conquered him. Asleep, many were captured. That the artillery men slept on horseback was evidenced by the fact that every man lost his cap."

THE SILENCE OF SLEEP

But even this is not so surprising as some of the facts Dr. Crile heard from an associate, Dr. Gros, who, with some other men of the American Ambulance, were called at midnight to the town of Meaux. They found it in utter darkness. "Not a sound was heard in the street, not a light was seen. The only living things were hundreds of cats. They called, they shouted, in vain they tried to arouse some one." They succeeded at last in awakening the mayor. He told them that his town was full of wounded men: "I will show you," he said. "With the aid of a flickering lamp, they threaded their way through dark streets to a dilapidated school building. Not a light! Not a sound! There was the stillness of death! They rapped louder, there was no response! Pushing open the door, they found the building packed with wounded—more than five hundred with all sorts of wounds. Some were dying, some dead, but every one was in deep sleep. Bleeding, yet asleep; legs shattered, yet asleep; abdomen and chest torn wide open, yet asleep. They were lying on the hard floor or on bits of straw. Not a groan, not a motion, not a complaint—only sleep!"

Some of them came to the hospital more dead than alive and "slept on while their wounds were being dressed." Finally, "after deep sleep for two or three days, during which they wanted neither food nor

drink, they began to be conscious of their surroundings: they asked questions; they experienced pain; they had discomforts and wants; they had returned from the abysmal oblivion of sleep."

Indigestion, headaches, "nerves," or whatever else happens to be contributing to a business man's discomfort at night may rob him of sleep and result in a certain amount of physical impairment, but these, obviously, are trivial annoyances compared with the pangs of hunger, the aches and pains and "nerves" of the tortured wounded men on that retreat to the Marne. But when sleep became imperative it had its way with them at Meaux.

May we not pin a little more faith upon the human mechanism's adaptiveness?

Dr. Eugene L. Fisk, director of hygiene of the Life Extension Institute, answered yes. One of the reasons why insomnia is so much dreaded, he told me, was that it is wrongly conceived by many of the laity to be a disease. There is no such disease, he declared, and "in its simple form, where there is no positive disease in the background, it is merely a bad cell habit, kept alive by some fault in the manner of living, some breach of brain discipline, or some disturbance in the functions of the body that result in insistent messages being sent to the brain centres during sleep or while we are trying to sleep." Trying to sleep is "a pathetic and futile task," and, the doctor adds, "much better results usually can be obtained by not trying to sleep."

INSOMNIA IS NOT A DISEASE

Dr. Fisk told me that the first question the man who thinks he has insomnia should ask himself is whether he is not coddling a delusion—whether he is not suffering more from fear of insomnia than from insomnia itself. "It isn't a disease, and one of the first things to do is to banish the fear of it." Sleeplessness deserves attention as a symptom; any one of a hundred or more different prescriptions may be the proper cure for it. Dr. Fisk argues the case in this fashion: either there is something physical the matter or there is a fault in the manner of living and thinking. If there is something wrong with a man's

body the sooner he sets about having it corrected the sooner he will know the comfort of sound sleep. That much is obvious. A physical ailment itself is not always so apparent, however, and an examination by a competent medical man may be required to reveal it. So, first of all, get a physical examination. For note this: any number of ailments have sleeplessness as one of their symptoms, and sometimes the trouble lies in something the business man does not suspect—as in eye strain or intestinal trouble of some sort.

But suppose a thorough physical examination reveals nothing in the bodily mechanism that is seriously in need of correction?

"Then," the doctor answered, "the place to put your finger is on the word 'habits.' Now, don't hastily surmise from this that I mean only such matters as too heavy an evening meal, too much tobacco, too much alcohol, too much strong coffee. It is true that all the texts that hygiene preaches will do their valiant part, if they are followed, to better matters. They are important enough—fresh air, a little prescribed exercise, bathing, posture, a diet not conducive to constipation. But what I have in mind just now is something which can best be described as mental hygiene. The *WORLD'S WORK* article in September on "Nerves" told a part of the story. The man with imagination too often misuses it in introspection; he is his own worst enemy. You would be amazed to find how many men of this type, who often enough are getting all the sleep they need, delude themselves into believing that they are not. And all that is hurting them is groundless worry! That you can't sleep eight or nine hours a day is no sign that you are not getting all the slumber you require. Your particular sort of body may not require more than six hours; possibly even less will suffice it. Ask yourself this—did it ever occur to you that you might be making yourself ridiculous by worrying over nothing? It is nonsense, of course, for Edison, who gets along on four hours, to contend that that is enough for anybody; but it is equally absurd to suppose that everybody has to have eight or nine. An infant can profitably put

in a great share of his time in napping, while the health of the child's grandfather may not suffer in the least from a rather short ration of sleep."

But how about a middle-aged business man? Suppose him, as he so often likes to picture himself, a hard-driven person having little time for exercise and recreation? Suppose that he has good reason to believe that he is not getting enough sleep, and yet he is a person not physically ailing?

For such a case Dr. Fisk contended that no special prescription was required—the place to look for the seat of the trouble was still in habits:

"Overwork is not to be blamed nearly so often as habits of work, habits of thought. Here is a hint that has been found valuable in a great many cases—for a reasonable time before turning in to bed, the business man should shut down the business part of his brain works. The soundest kind of physiology is behind this warning. The prime reason why he cannot get to sleep when he goes to bed is that his mental machinery is still going full blast. He has taken his plans, hopes, and worries to his pillow instead of leaving them behind in the office when he cleared off the top of his desk and started home.

"No one is better aware than I am that there are certain men whose health and efficiency apparently are not diminished by prolonging their work day into the hours that follow the evening meal. But it is not good sense, good physiology, good business policy, or good domestic policy for the majority of us to attempt to follow their example, particularly if this sort of practice makes it harder for us to get to sleep. It is much better practice from every point of view to shut down the business part of the brain works for a few hours before bed time. The right kind of company or books or plays or picture shows, a quieting ride in a motor car—quieting, not thrilling—a game of cards, or a stroll in the fresh air is the prescription. The proper preliminary to a good sleep is to shake off the weightier things for a while. Carrying your worries and business problems to bed is as ridiculous as going to bed with your clothes on. It's a bad cell habit—bad mental hygiene."

All well enough as a preliminary. But what next? To my layman's mind came a picture of an uneasy reater counting imaginary sheep leaping over imaginary hurdles. Was that good practice or bad?

"Bad!" the doctor answered. "Here's a better idea. Did you ever see a printer drop a tray of type and make a 'pi' of it? That is the thing to do with your thoughts. Make a 'pi' of them. Make the mind a blank as far as possible and simply refuse to carry on consecutive thought. Don't count sheep jumping over a stile or try to count a million. Go on a mental strike and refuse to let your higher brain cells work, and they will subside."

DON'T WORRY ABOUT LOSS OF SLEEP

Dr. Fisk has gone on record in a bulletin of the Life Extension Institute with a statement that if you suffer from insomnia no doubt you are getting ten times as much sleep as you think you are. "Perhaps you really get enough," he suggests, "if it could be made continuous. Do not worry about loss of sleep, therefore, or look upon it as the forerunner of something dreadful. On the other hand, do not accept restless, insufficient sleep as an incurable condition. No one can be at the high point of efficiency and well-being unless those brain cells have their required rest, and in some cases it may be the early symptoms of chronic disease." Some people, this authority holds, can get along with a surprisingly small allowance of slumber because, as he phrases it, they sleep "faster" than others. "In such cases," he says, "there is more absolute and complete rest of the brain cells that are concerned with the higher mental processes. Vigorous, efficient brain centres do not tire as readily as the feeble centres, and thus do not require as much rest."

Is it possible to get too much sleep? One medical man who answered yes told me a story of a patient "who didn't know what was the matter with her." She was sound in body but preternaturally dull and listless. The physician discovered that she had more time on her hands than she knew what to do with and was spending a considerable share of it in taking naps after every meal. He decided to see to it

that she kept awake more, and to this end he prescribed some pills which must be taken, without fail, one every hour during the daytime. The pills were nothing but bread but they worked a complete cure for anemia.

HINTS FOR THE SLEEPLESS

In the way of practical hints to the person troubled with sleeplessness I found no source of information so rich and concise as the literature of the Life Extension Institute. But none of these hints advised the layman to administer sleep-inducing drugs to himself. "In some cases of disease," observes one of the Institute's bulletins, "sleep through narcotics is necessary to life, but these are matters that should be supervised by the physician. The sufferer from insomnia who resorts to self-drugging is like a man afloat on a dangerous uncharted sea. Under drugs we include alcohol. Alcohol is a narcotic. The property most highly valued by humanity is the very property of dulling those higher brain cells and releasing the lower nerve elements from their control. Exhilaration, inebriation, coma, or narcotic sleep; these are the stages of alcoholic influences. Sufferers from sleeplessness would do well to leave alcohol alone. That bottle of beer or porter at night may bring sleep just as will opium or chloral or any other narcotic, but the light sleeper is an easy mark for drugs, and the physician who prescribes alcohol for such people is taking a heavy chance with his patient."

The Institute contends that a normally functioning brain can sleep under almost any circumstances. "But once there has been trouble and the habit of fitful sleeping acquired, certain precautions are necessary." A few useful hints follow:

"Black, opaque shades, shutting out the early morning light, are often sufficient to check the habit of waking up early.

"Outdoor sleeping usually promotes sound, refreshing sleep, but occasionally the early morning light is disturbing. Sometimes the glare of the sun causes actual eye strain. The eyes and face should be protected from the light as far as possible. A simple device is to rub the

eyelids with burnt cork, or to tie a black stocking or other shield over the eyes.

"Eye-strain is a fertile cause of insomnia. Restless sleep, like headache, calls for thorough examination of eyes.

"After heavy muscular exercise, the muscles and the body generally are rested more quickly without sleep, as the elimination or neutralization of fatigue poisons seems to be more rapid during waking hours. A rub-down and a rest before going to sleep is advisable under such circumstances.

"As to the amount of sleep required, we have seen that this depends upon the type of individual and the nature of his work. For the average adult, eight hours are sufficient.

"Look to your diet at the evening meal. A heavy evening meal is usually not well digested by a person who is on edge from insomnia, and if there is resultant flatulence or any disturbance along the digestive tract, messages will be sent to the brain and wake it up.

"As a rule light sleepers should avoid drinking water or other fluids several hours before retiring in order that messages from the bladder may not prove disturbing. On the other hand it will often help, if one is restless, to arise and munch a cracker or take a drink of warm milk. The habit of arising and restlessly moving around at night should, however, be avoided. Tea and coffee should be left alone by restless sleepers; excess of tobacco is also harmful."

A final paragraph has to do with the value of bathing:

"A neutral bath is a good sleep producer. The temperature should be about 95 degrees, and the bath should last at least 20 minutes. The bath room should be warm, about 75 degrees, the bed sheets warmed, and the patient wrapped in a warmed sheet on leaving the bath and thoroughly dried in bed and covered with enough blankets to prevent chilling but not to cause a perspiration."

Needless to add, these rather elaborate precautions are meant for people who are suffering severely enough from sleeplessness to be classed as "patients."

The Next Five Years of the Navy

WHAT WE SHALL GET FOR THE BILLION DOLLARS
WE SHALL SPEND

BY

REAR ADMIRAL BRADLEY A. FISKE, U. S. N.

A MAN rushed violently on to the platform of a railroad station, but just missed the train. "You didn't run fast enough," said a bystander. "Oh, yes I did," was the reply; "but I didn't start soon enough."

The man's mission had been to catch the train. During the time that he was running, the mission remained the same as it had been before he started, but the difficulty of accomplishing it increased as the time set for its accomplishment drew near; because he had not started early enough to permit his catching the train by proceeding at a normal speed.

The United States is in the same position. It ought to have started to prepare for possible war many years ago, but it did not start early enough to permit our proceeding at a normal rate of speed; with the result that, having awakened suddenly to a realization that war with some great Power or Powers is possible, we find that we have to hasten toward preparedness at the greatest speed that we can attain. This is unfortunate. To have to do things in a hurry is always unfortunate; one is apt to make mistakes, and to overlook important things.

Having started to prepare, the country is suddenly confronted with a necessity that navy and army officers have been trying for many years to prevent: the necessity of preparing for war in a hurry. The first sign of starting was the appropriation passed by the Congress on August 25, 1916, for 10 battleships, 6 battle-

cruisers, 10 scout cruisers, 50 destroyers, 9 fleet submarines, 58 coast submarines, 3 fuel ships, 1 repair ship, 1 transport, 1 hospital ship, etc., and 68,700 enlisted men; and the first sign of hurry was the provision for a 20 per cent. increased cost, "to provide for the speedy construction of the vessels herein authorized."

It has been said by many people of importance that there is no danger of the United States being drawn into war with any nation or nations now fighting in Europe, because those nations will be too exhausted in men and money to be able to do any more fighting. This idea seems good at first thought; but the people who hold it forget that the nations now fighting are fighting with armies, and that they would not need armies to fight us, but only navies. And they forget, too, that the war will probably end with their navies at least as formidable as they were; that the expense of sending any fleet or fleets across the Atlantic would not be very much greater than that of maintaining them where they are; that the risk of sending a very large force against us would not be great, especially if an attack were simultaneously threatened on our Pacific coast; and that the amount of indemnity that could be exacted and collected would be so great, and the "security" or chance of success so good, as to make the enterprise a good business venture.

If actual invasion by troops would be necessary, the venture would be more difficult and expensive, but not so difficult and expensive as the pacifists declare;



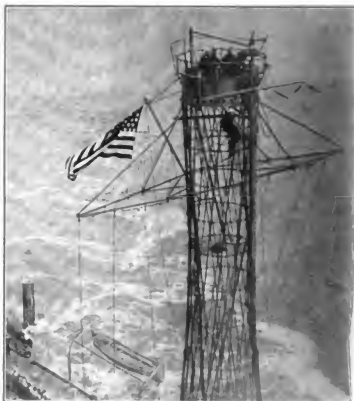
REAR ADMIRAL BRADLEY A. FISKE

SINCE Admiral Mahan's death, Admiral Fiske has been recognized generally as the greatest naval authority on this side of the Atlantic. Certainly no American is more competent to discuss the existing naval problems of the United States, for Admiral Fiske's career spans the whole period of modern naval development. When he was graduated from Annapolis, in 1874—the second man in his class—the American Navy consisted of a few useless hulks left over from the Civil War. Last session Congress adopted the greatest naval programme ever planned by any nation in time of peace. In this progress Admiral Fiske has played an important part, both on the theoretical and the practical side. Indeed, Admiral Fiske has been conspicuous in most of the stirring events of the modern American Navy. He was a lieutenant under Captain "Bob" Evans in Valparaiso Harbor, in 1891, when certain outrages against American sailors nearly brought war between the United States and Chile. In 1894, he served on board the "San Francisco" at Rio de Janeiro at the time when certain revolutionists, seeking to reëstablish the Brazilian monarchy, were conducting an illegal blockade. On this occasion the American squadron escorted American ships through the blockade, and, when the Brazilian ships showed a disposition to prevent them, opened fire and landed a shell on the hull of a Brazilian warship. That prompt act ended the blockade! Admiral Fiske was the navigator of the "Petrel" at the Battle of Manila. The captain recommended him for "eminent and conspicuous conduct" in this battle and Admiral Dewey reported him for "heroic conduct."

Admiral Fiske has a European reputation as an inventor. His telescope sight, which makes possible long-distance firing—six to ten miles—has been adopted by all navies. Without this sight, such naval battles as have been fought in the European War, particularly that off the coast of Jutland, would have been impossible. Indeed, Admiral Fiske is one of the world's greatest experts on the technical mechanism of naval warfare. In the last three years he has become widely known to his countrymen for the vigorous fight which he has made, against discouraging odds, for an American Navy that could adequately protect our interests and uphold the national honor and dignity. His testimony that it would take "at least five years" to equip an adequate fleet was the first thing that aroused Americans to the dangers threatening them. No man, therefore, has greater qualifications to discuss the work—that of developing the new Navy.

for the reason that we have no resisting force that would be adequate in numbers, material, or training to oppose the troops that would be sent, fresh from the most instructive and practical experience that the world has ever given. Our people do not realize the difference between—not the highly trained soldier and the incompletely trained soldier—not between the highly trained lieutenant, captain, major, or colonel and his incompletely trained official equal—not even between the highly trained general and the incompletely trained general—but between the highly trained, highly officered, and highly generated European army that would be sent and the untrained army with which we should oppose it; officered by unexperienced officers, generated by unexperienced generals, unused to act together as an army, and no more to be compared with the armies operating in Europe now than a boy's baseball team in a country village is to be compared with the "Red Sox" team of Boston.

That a large indemnity could be col-



TEAM-WORK BETWEEN THE CROW'S NEST—

The fire of a battleship is directed from here, so that the crew aloft must work in complete unison with the rest of the crew below for best results

lected by the simple act of blockading our principal ports, stopping our export



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—AND THE BOILER ROOM

To make a battleship truly efficient there must be perfect team-work between all components of its crew from the stokers, deep down in the vitals of the ship, to the men stationed aloft in the masts



THE LEAST DEVELOPED ARM OF THE NAVY

One of the chief problems in developing our Navy is the production of aeronautical material and the development of a flying corps to operate it

and import trades, and making aerial raids from the blockading ships on our great coast cities, some may deny; stoutly

declaring our ability to maintain ourselves indefinitely, and to tire out the blockading force before we would yield. Not being a prophet, I cannot dispute this stand authoritatively; I can only point out that this kind of endurance would be the most passive possible kind of a purely passive defense; and that history contains no record of any purely passive defensive succeeding against a vigorous offensive. The United States might, if it chose, hold out for a long time; but during all that long time, it would be leading a life increasingly restricted; the United States would be in jail. In the end, unless it did differently from what all other countries that have found themselves in similar predicaments have done, it would follow the path of wisdom, yield to inevitable necessity, and make peace; and then start in—as France and many other countries have done—to retrieve the errors of the past, and build up an adequate national strength.

The last appropriation bill recognized and appropriated for a new order of things. It showed this recognition, first, by greatly increasing the enlisted personnel; secondly, by appropriating for battle-cruisers, a type of vessel never appropriated for before for our navy; thirdly, by making a very considerable appropriation for aëro-

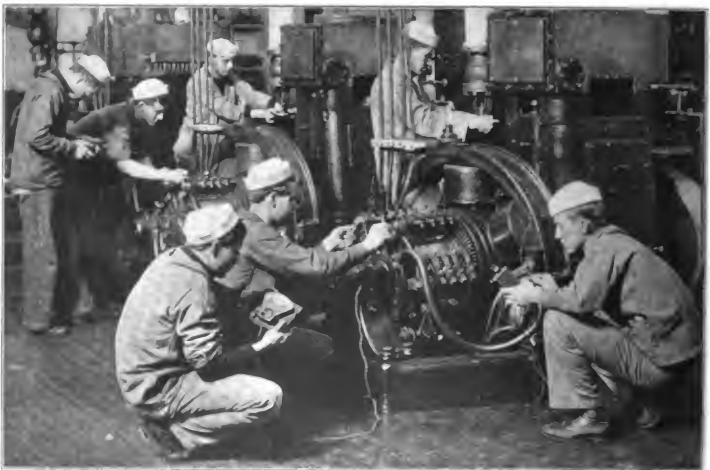


THE NEW NAVY TO HAVE MORE AIRPLANES

From 1911 until March 31, 1916, Congress appropriated but \$500,000 for aviation. Last year, however, it appropriated about \$16,700,000



I. A SCHOOL OF CARPENTRY



II. STUDYING THE INTRICACIES OF ELECTRICITY

THE UNITED STATES NAVY

The sailor is taught many useful trades on board a battleship by which



III. MASTERING THE STEAM ENGINE



IV. LEARNING WIRELESS TELEGRAPHY

AS A TRAINING SCHOOL

he is enabled to earn his livelihood when he leaves the service



SUBMARINES FOR OFFENSE AND DEFENSE

The visits of the German submarine *U-53* and the *Deutschland* have illustrated graphically our need of submarines in the event of war

navies; and fourthly, by placing on an efficient basis the Office of the Chief of Naval Operations, which Congress had established in the previous session.

The naval problem now is how to institute this new order of things. The task may be divided into four parts:

1st—The production of the new personnel and of the increase in the material of types now existing, and the incorporation of them in the existing navy.

2d—The production of the battle-cruisers and the development of the tactics of their handling.



"MOTHER SHIPS" AS ESSENTIAL AS THE SUBMARINES

The naval bill of 1916 calls for nine fleet submarines and fifty-eight coast submarines. As a general rule old monitors or destroyers which have outlived their usefulness act as "mother ships" to the submarine



THE NAVY OF YESTERDAY

The famous white fleet of the 'nineties gathered at Hampton Roads. The construction of the modern dreadnaughts rendered vessels of the type of the white fleet wholly obsolete

3d—The production of the aëronautical material, and the development of a flying corps to operate it.

4th—The development of the Office of the Chief of Naval Operations.

In order to understand the difficulties of the first part, it will be necessary to realize that in any war in which we should become engaged with a European Power, we should be given very little time in



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THE NAVY OF TO-DAY

Our chief bulwark against foreign aggression. Without an adequate navy to defend ourselves a hostile Power would have little difficulty in seizing the great cities of the East and holding them perhaps indefinitely for an indemnity



THE NEED FOR OFFICERS

Although the enrolment of the Naval Academy has been increased within the last year the number of men graduated each year falls below the number of officers required for the service

which to get ready. Every military nation regards it as an elementary principle that, when going to war with a non-military

nation that it is sure will be unprepared, such as the United States, one must strike with the utmost possible quickness. When the



AN OFFICER MUST KNOW HIS SHIP

Midshipmen of the United States Naval Academy studying the mechanism of and manipulating guns preparatory to receiving commissions in the Navy



THE NAVAL OFFICER, MASTER MECHANIC

The efficient naval officer must be a highly developed, sensitive, and intelligent mechanism tuned to fit into and control the delicate organism of a man-o'-war

present war broke out in August, 1914, the German Army, by virtue of its superior quickness, seized and fortified a line of

positions in three weeks that two years of fighting afterward hardly even weakened. By taking advantage of an unprepared



TO SELECT OFFICERS BY FITNESS

The need of sufficient skilled officers to command the vessels of its greater navy is a serious problem that confronts the United States. By the new naval bill officers are to be selected by fitness instead of by seniority



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THREE CREWS TO MAN ONE NEW DREADNAUGHT

To obtain a trained crew which could operate the up-to-date mechanism of the U. S. *Arizona* (shown above) and which could not be furnished by untrained men gathered from the recruiting stations, it was necessary to withdraw three other battleships from active service.



\$6,000,000 FOR INSTALLING PLANTS TO BUILD VESSELS

The need for speed was exemplified by a 20 per cent. increased cost provision in the naval bill, "to provide for the speedy construction of vessels"

condition of your enemy, you can, with very little risk and effort, put him into a position of disadvantage that he may never be able to get out of. An extreme, though crude, analogy is that of the thug who assaults an unprepared victim and robs him of all he has, before he can resist.

The ultimate aim of a navy in peace is



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A NAVY IS NOT MADE UP ENTIRELY OF FIGHTING SHIPS

Colliers are important and expensive accessories to an efficient fleet. The new naval bill calls for three vessels of this type

to be absolutely ready when war breaks out. In our case we should have two weeks after the sailing of a European fleet in which to get ready. If our Atlantic fleet (that is, the fleet that is actually in commission in active service) contains all the ships that we intend to use, two weeks is enough time in which to make all the



THE NAVY A LONG APPRENTICESHIP

Because of the peculiar skill to be acquired in the Navy and the long absences from home a man must stay in the service for a considerable time to make it worth while for the Government to train him

final preparations. But the active fleet is only a part—though the most important part—of the total navy and the com

missioning of the ships not in the active fleet—that is, the commissioning of the ships kept in reserve, and of ships purchased from the merchant service—and the necessary expansion of the shore stations to a war basis will take an amount of time that depends wholly on the amount of preparation for these tasks that has been accomplished. A great part of the preparation is the preparation of good plans: plans that are based on a correct estimate of the situation, and developed in sufficient detail. Plans are not all, however; plans are merely plans, and they

are valueless unless there exist means to carry them out. No matter how many plans we may have for preparing the Navy.



EVERY SAILOR A SPECIALIST

The training which a man gets in a submarine or on a destroyer differs greatly from that obtained on a battleship and so renders an interchange of crews from one to another difficult

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avail if we do not
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ne trained personnel
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rescribe.

To make the matter
lear to our minds, we
must realize that what
we must do is to main-
tain our whole navy—
not the active cruising
fleet only—in a state
of continuous prepar-
edness, during all the
time in which the new
vessels and mechan-
isms are being pro-
duced and added to
the existing establish-
ment; so that, when
the last item of the
various things has
finally taken its al-
lotted place, the Navy
will have absorbed

and assimilated all. The new units of
material and personnel, as they are got-
ten ready, are not to be placed in cold

storage somewhere until all are ready;
but each unit, as it becomes ready, is to
be put into its proper place and set im-



MORE RECRUITS FOR THE NAVY

One of the difficulties of obtaining suitable enlisted men is the reluctance of many young men to spend a large portion of their youth in learning things which they, erroneously, think to be of little value in after life



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THE NAVY PUBLICITY BUREAU

The Navy Department maintains a publicity bureau whose duty it is to advertise and disseminate facts about the Navy to encourage recruiting. The naval bill calls for 68,700 enlisted men



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SERVING AN APPRENTICESHIP ASHORE

Enlisted men are taught and drilled in the mechanics of the Navy before being stationed upon the various men-o'-war at the Newport Training Station

mediately to work. Of course, it will be impossible to do this without considerable changing of men; when the *Arizona*, for instance, went into commission last Octo-

ber her crew of more than a thousand men had to come from somewhere. As she was equipped with the very latest kinds of mechanisms of all sorts, and as



THE MISSING LINK BETWEEN SOLDIERS AND SAILORS

The marines form what might be called a high-seas constabulary or international police, their office being to protect property and restore order, and they have little to do with the operation of a battleship



ENTER THE BATTLE-CRUISER

The United States has heretofore called upon the destroyers (above) to perform the scout duties of battle-cruisers, but, profiting by the example of battle-cruisers in the Great War, the naval bill authorizes the construction of six vessels of this latter type

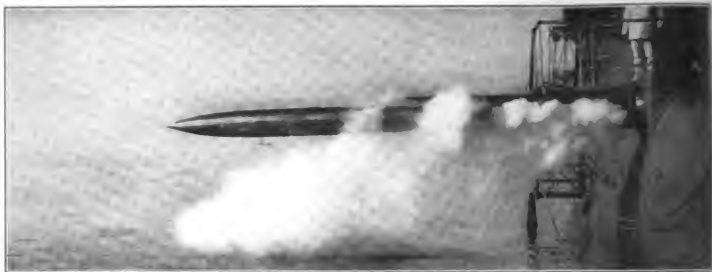
all new mechanisms (which means not only mechanisms recently made, but also mechanisms of novel types) need even a higher degree of expert care than do mechanisms

that have been used a little, but not too much, a very large proportion of the crew sent to her had to be expert men. These could not be obtained from the recruiting



PLAYING THE WAR GAME

Naval officers at the War College studying the movements of war vessels and the strategy of the high seas upon a miniature scale. A General Staff to coordinate the operations of fleets is a long-standing need recognized by the new naval bill



TEAM-WORK BETWEEN SHIP—

The destroyer fires a torpedo from above water whereas a battleship discharges the missile below the waterline

stations; they had to be procured from other ships. As a consequence, those other ships lost the greater part of their trained crews; and they will have to remain in a condition of decreased efficiency, until the men are promoted in them to fill the vacancies left by the men sent to the *Arizona*, and the new men sent to them to fill the other vacancies shall have become efficient in

their respective duties, and until the whole ship and her crew shall have become a living organism; all the parts working together toward a common end, mutually independent, and yet mutually dependent and assisting.

What has been said thus far has taken no note of the great differences in ships, and has ignored the difference in training



—AND SHORE

To maintain an adequate Navy the United States must keep always on hand vast quantities of munitions both for offense and defense. The naval bill contained \$11,000,000 for the construction of armor plants

that a man gets in a submarine or destroyer, for instance, from the training he gets in, say, a battleship. This consideration is not a vital one; but it makes the transfer of men from one craft to another more difficult than it otherwise would be. If, for instance, a battleship is to be fitted out, we could not take men out of submarines who would at once become efficient in the battleship; and besides, the men themselves, if sent to the battleship, would soon lose the value of most of the experience they had gained in submarines.

One way in which the problem of expansion is more difficult than for civilian concerns is in the greater difficulty of getting enlisted men of the kind that are needed. This difficulty arises largely from the fact that the exigencies of naval life demand a higher order of physique and a longer time of contract than do most vocations in civil life. Because of the peculiar skill to be acquired, and the long absences from home ports, a man must agree to stay in the Navy a considerable time, to make it worth while for the Government to enlist and train him. This period in our navy is four years. It is the same period of enlistment as is prescribed in most other navies; but in the British Navy the period is twelve years. It is not difficult to be a man-of-war's man, but it is very difficult to be a good one; no matter what position a man may hold, no matter whether he is an electrician, a boatswain's mate, a gun pointer, a coxswain, or a nurse, he will not do his duty efficiently unless he is primarily a good man-of-war's man. He must have the spirit of the Navy, or he will not fit into the machine, no matter how skilful, technically, he may be. One reason for the difficulty of getting suitable enlisted men is the reluctance of many thoughtful young men to spend a considerable part of their youth in learning things which they think (erroneously) would be of little use to them in after life, in case they should not ultimately decide to adopt the Navy as a career. Besides, they dread "discipline," the rigors of which they exaggerate, and the beneficent effects of which on their own characters they fail to apprehend. The difficulty of getting suitable men for positions at

home in civil life is inconsiderable compared with the difficulty of getting them for the Navy. When the country as a whole becomes alive to the advantages of the naval career for enlisted men this difficulty will automatically disappear.

THE PROBLEM OF NAVAL EXPANSION

The problem of naval expansion would not be so hard were it not for the fact that every ship needs such a great number in its crew; because the greater the number of men that must work together as "a team," the greater the difficulty of accomplishing the "team-work," and the longer the time required. If only two men are needed to run a machine—to run a locomotive, for instance—those two men can learn to work together very quickly. Even in large manufacturing concerns, even in navy yards, the difficulty of getting the necessary team-work is not great; because, although there are a great number of teams, the membership in each team is small, and the teams are quite independent of one another. Not only this, but the number of different kinds of work that each team, or group, must do together is few; and as these things are done in the same way every day, abundant practice together is quickly obtained. In a factory, for instance, nearly every man goes to the same lathe, or other mechanism, and does the same kind of work in the same room, under the same foreman, sometimes for years. But in a ship, especially in a large ship, like a battleship or battle-cruiser, most of the men work together in large groups, such as turret crews, one hundred men sometimes composing a turret crew. Now though it is true that the work of some men in any group is more important than the work of some others in bringing about the final result, nevertheless that final result is the result of the work of the group, as a whole. And though it is true that, even in a battleship, the whole thousand men do not work physically together, shoulder to shoulder; though it is true that each turret crew is shut up inside of its own thick walls of steel; that each fire room force is locked in its own air-tight fire room; that each torpedo crew is below the water-line in its

own torpedo room; and that the captain himself is imprisoned in his steel conning tower—nevertheless, the ship and all the men it floats are bound together by invisible cords that make a ship a unit; and the major effect of the training and of the drills of all kinds is to make the whole a living organism. That this is difficult to bring about is true; that it does not exist until it has been brought about is also true; that the ship is ineffective until it has been brought about is also true; and that this fact must be fully appreciated is also true.

The difficulties of the second part of the task, that of producing the battle-cruisers, are largely difficulties of naval construction and engineering; and with the abundant talent, skill, material, and money in the United States, these difficulties are not of a very high order. They are of a kind with which our highly trained naval constructors can cope successfully. The manning and officering of these battle-cruisers, after their completion, and the training of them in the fleet, present no special points of difficulty.

DEVELOPING AERONAUTICS

The same cannot be said about the third part of the task, that of the development of aeronautics. The nations of Europe have had so much recent and practical experience in military and naval aeronautics while we have had so little, and can get so little, that our progress will probably be slow in catching up with them. In getting the material, we ought to have little trouble, in view of the present advanced status of air-craft manufacture in this country. The fact that we can accomplish more in the direct line of defense of our coast by the development of air craft, and accomplish it more quickly and cheaply than we can by any other means, makes the problem of how to develop our aeronautical defense one of peculiar urgency. Lieutenant-Commander H. C. Mustin, U. S. N., made clear our needs in aeronautics, and made clear the path of progress that we ought to follow, in an able paper that was read before the Navy League Convention in April, 1916.

But the greatest difficulty will be in

the fourth part of the task—in so developing the Office of the Chief of Naval Operations as to make it able to cope with the general staffs abroad that started ahead of us so many years ago and that have had the inestimable advantage of experience, not only in preparing during long years of peace, but of operating in actual war. Unlike the constructors and the engineers, the officers who will start our strategic machinery running will have no formula to guide them, few fixed principles, and little definite knowledge of what has been done in the older and more far-seeing navies. As the Chief of Naval Operations is the senior naval adviser to the Secretary, it is essential that his assistants should be so highly trained that he shall be enabled at all times to give the Secretary professional advice of the highest order of foresight and correctness.

INCREASED MATERIAL AND PERSONNEL

The Congress that adjourned on the 25th of August appropriated a larger sum of money and authorized greater increases in personnel and material than had ever been appropriated or authorized by any Congress before. To handle the money, and to produce the increased personnel and material, will be a difficult undertaking; for the money must be handled wisely, and the personnel and material must be handled and produced not only wisely, but quickly.

The actual handling of the money, however, and the actual production of the increase in personnel and material are not the whole task, but only parts of it, and not the most difficult parts. The money can be handled by the same means as have the smaller sums appropriated in the past; the officers can be procured by the same means as heretofore, that is, by being passed through the Naval Academy at Annapolis; and the enlisted men can be procured by recruiting stations like those at present used, though perhaps increased in number and enlarged in scope. The ships can be constructed, the guns can be fabricated, the engines can be built, and all the multifarious apparatus operated by electricity, steam, gas, air, and oil can be provided by means like those at present

used, though on a larger scale. The problem of how to accomplish this in the best way is like the problem with which every railroad, or other large concern, is confronted when called upon to enlarge.

But during all the time in which the increased personnel and material are being procured, the Navy itself must be kept in running condition as a fighting machine. To accomplish this is an undertaking more difficult than to provide the increase, because the field, or at least part of it, is for us almost untrodden. The problem of how to do this in the best way is also like the problem that railroads and other large concerns must face when enlarging their business; because they, also, have to keep the machine running all the time they are enlarging it. It is also a little like that which the builders of subways in New York have had to face: that of how to build the subways and yet not obstruct the traffic in the streets.

KEEPING THE MACHINE RUNNING SMOOTHLY

In the case of any railroad or other large concern, such as the Navy, the task of keeping the machine running smoothly while enlarging it consists mainly in providing the newly constructed mechanisms with trained men, and in getting those new mechanisms into use as part of the whole machine, without depleting seriously the trained personnel that is needed to handle the mechanisms previously existing, that must be kept going. In its broad phases, the problem of how to do this is the same in all cases; though special conditions make certain parts of it more difficult for some concerns than for others.

This shows that the main difficulties of the naval problems of the next five years will be almost wholly professional.

The last Congress appropriated for so many new craft, and showed such a sudden realization of the need for more officers and enlisted men, that the main difficulty will not be (as it often has been) in wringing sufficient appropriations from a pacifist Congress; but will be, first, in expanding the Navy, and keeping it in efficient fighting condition all the time, and, secondly, in advising Congress professionally as to what will be needed in men and material from time to time. The fact that Congress directed the enlargement of the scope of the Office of Chief of Naval Operations, so as to make it as good as a general staff, and the increased attention given by the House and Senate naval committees to the professional opinions of naval officers in preparing their recommendations to Congress indicate that the thoughtless system, or rather lack of system, which endured for so many years, is at last to give place to the system that other navies use; and that the opinions of professional experts are to be given much more weight than they have been given heretofore by Congress.

This being the case, the amount of money now to be expended being so large (more than 300 million dollars a year), and the country being now finally awakened to the desirability of getting the maximum naval protection for the money it expends, the next step is to give the experts the maximum opportunity for solving naval problems correctly and thereby arriving at correct opinions. This opportunity is offered by the "game board," in which supposititious campaigns are fought in miniature, under carefully established rules, and by which the comparative values of various craft and various plans can be ascertained and the more important naval problems solved correctly.

James J. Hill's Rules

Fourth article from the yet unpublished "Life of James J. Hill," written with his approval and from exclusive access to his personal papers by his friend,

JOSEPH GILPIN PYLE

ONE can hardly understand today how these men (Mr. Hill, Mr. Kittson, Mr. Stephen, and Mr. Smith) dared to engage to do what they actually performed. "Altogether," says Mr. Hill, "I would estimate the cash liability incurred by us at between four and five million dollars."

Of course, the associates had no such sum. They just had to throw whatever they had into the pool. Mr. Hill said: "Mr. Smith and Mr. Stephen called upon Mr. Kittson and myself to put up everything we had; everything that was available as security and for any money we might need in prosecuting the work we had in hand."

On February 8, 1878, Mr. Hill writes to Mr. Stephen: "Enclosed please find promissory note on demand, signed by N. W. Kittson and myself. We hope nothing will occur now to prevent the Dutchmen carrying out their part of it." There were none of the tremors that the most confident business men are apt to feel after they are committed irretrievably to a hazardous undertaking. On the contrary, he writes to Mr. Kittson, five days later, that the head of another big railroad system, has applied to him for an interest in the purchase, and says: "I told him we had made arrangements which prevented our taking in any one. If we should want to sell our contract, his road would pay a million dollars cash for it and let us out."

The table shows the official financial record of the St. Paul & Pacific Railroad for 1878.

These earnings, it must be remembered, came from a territory still very restricted. They were drawn from through business

[In this article, Mr. Hill's successful business methods are revealed largely in his own words as written informally in letters to his friends at the time he was proving their soundness in action. The gigantic labors of this period include the financing of his purchase of the St. Paul & Pacific Railroad and the

and from the local traffic of a country within a comparatively short radius of St. Paul and Minneapolis, together with a small part of western Minnesota. The great treasury of the northwestern portion of the state, the Red River country, the "granary of the world," had still to be opened up. It was not merely undeveloped, it was still virgin country.

Mr. Hill's most steadfast faith was in the American Northwest and its development. This railroad enterprise was for him no speculation, else he might a thousand times have taken a big profit and withdrawn from it. It was a great constructive work, whose future he had gauged. If he was right, then it must also be one of the most splendid opportunities for investment that this country ever offered. As such he held it. He never set his private fortune above that of the railroad system of which he was the head. At every moment he held himself just as ready, should need arise, to turn over to it every dollar of his own as he had been

	MILES	GROSS EARNINGS
First Div. Main Line	150	\$741,387.69
Second " "	57	100,911.01
Branch Line	76	469,070.33

THE FINANCIAL RECORD OF THE

of Business Success

AS REVEALED IN PRIVATE LETTERS TO HIS BUSINESS ASSOCIATES AND IN THE REORGANIZATION OF THE GREAT NORTHERN RAILWAY AND THE BUILDING OF HIS RAILROAD TO THE PACIFIC COAST—HIS THEORY AND PRACTICE AS BUSINESS ORGANIZER, BUSINESS MANAGER, BUSINESS BUILDER, AND FINANCIER

building of a transcontinental railroad extension to the Pacific Coast and of a fleet of steamers on the Great Lakes, besides the construction of elevators, branch lines, and terminals; but these activities are here sketched chiefly as the background of his principles and maxims of business.—THE EDITORS.]

to put everything in pawn to buy those old, dishonored bonds. The risk was his. So was the profit. He originated and made possible the improvements that were to give his property special value.

Because of what he did to create the Northwest, where property values of billions of dollars grew from nothing, the railroad property grew to a value of hundreds of millions. And always scrupulously he took only his rightful share. He never speculated in the railroad's securities or permitted others to do so at its cost. For years he and his friends maintained a cash pool in New York for the purpose of buying in the railroad's stock if the bears attempted to raid it. After that became known, it was never subject to any but the ordinary market fluctuations. The policy was purely protective, and any attempt to manipulate prices was forbidden. Those who tried to force the stock up or down for speculative ends got their fingers pinched, and afterward let it alone. He paid back to every

man or woman who put a dollar in the property the principal with interest. In a time when railroad presidents received salaries immense enough to invite criticism, even according to the liberal ideas of the day, he refused to take a dollar. During the twenty-five years that he held the office of president and the five years that he was chairman of the board of directors, he would accept no pay. The profit on his investment in the property, he said, stubbornly, in answer to all propositions to vote him a salary, was sufficient compensation for his services. He never permitted a dividend to be passed. The stock of his company was as good as its bonds. If one takes pains to compute the amount paid out from the beginning in interest and dividends by his railroad, and compares that with the growth of his personal fortune, the latter will seem a modest recompense.

There were indications in plenty that the happy fortune of the new enterprise would not be long delayed.

"When I took possession of the reorganized St. Paul & Pacific Railroad in the midsummer of 1879," said Mr. Hill in a public address nearly twenty years later, "the road had carried during its last fiscal year 2,183,000 bushels of wheat. Of the crop of 1891 it carried 57,000,000 bushels, over one-third of all the spring wheat raised in the United States." And this is only an index of the rapidity with which settlers came into the country, and a measure of the enormous additions that their production made to traffic of every kind, and to the property value of the railroad.

"It is our best interest," said Mr. Hill, "to give them low rates and do all we can

OPERATING EXPENSES	NET	INCREASE OVER 1877
\$363,008.67	\$378,379.02	\$279,096.98
65,896.29	35,014.72	27,250.71
201,881.84	267,188.49	142,063.67

ST. PAUL & PACIFIC RAILROAD, 1878

"The difference in cost between the operation of a boat of 3,000 and one of 12,000 tons is only \$28 per day. At this slight expense the carrying power is quadrupled."

to develop the country and create business." And he added the phrase which is the keynote of his whole life and achievement as a railroad man: "I desire to say that we consider ourselves and the people along our line as copartners in the prosperity of the country we both occupy; and the prosperity of the one should mean the prosperity of both, and their adversity will be quickly followed by ours."

The year 1878 was one of record-breaking work. Branch lines and extension lines had to be finished to save land grants and charters. In a letter of July 30th, Mr. Hill writes: "We are putting down a mile and a half of iron daily now." But at that time one could not, as now, place an order for railroad material and have it delivered with certainty anywhere near a given date. Intolerable delays threatened the defeat of the project. Mr. Hill himself was out in the field, seeing that construction was not delayed an instant. Wherever he was not in personal control—and he needed to be in all places at once—the pressure on the others became too great, and things sagged. In October he writes to one of his associates: "I find it pays to be where money is being spent."

PUTTING ALL EGGS IN ONE BASKET

On March 15, 1879, the decrees of foreclosure asked for were granted. Bondholders and stockholders had been dealt with, and all were satisfied. And, with his new career definitely before him, Mr. Hill parted with his business past by selling out his interest in the Northwestern Fuel Company.

On May 23, 1879, George Stephen, Donald A. Smith, Norman W. Kittson, James J. Hill, and John S. Barnes, the last mentioned representing the New York

firm of J. S. Kennedy & Co., met in a law office in St. Paul. They were there to complete the work

begun in effect five years before. Mr. Stephen was made chairman and Mr. Hill secretary of the meeting. Two weeks earlier the sheriff of the county in which St. Paul is situated had sold to these gentlemen, under foreclosure proceedings, the Branch Line of the St. Paul & Pacific Railroad from St. Paul to Watab for \$200,000, but subject to mortgages aggregating a little more than two millions. They now organized the St. Paul, Minneapolis & Manitoba Railroad Company, and appointed directors. The directors immediately met and made Mr. Stephen president. Common stock was fixed at \$15,000,000, and the president or some one as his agent was authorized to attend to forthcoming mortgage sales and buy in the other St. Paul & Pacific properties at foreclosure. The by-laws of the company authorized the appointment of an executive committee, consisting of three members, of whom Mr. Hill was named one, with this important provision, to assure swift and intelligent action: "The executive committee shall possess, and may exercise during the intervals between the meetings of the board of directors, all the powers and authority of the board." It was this body which for years guided the destinies of the new company. It acted first, with the celerity that the occasion often called for, and the board of directors simply ratified its acts at the next meeting.

The other defaulting properties were bought in for the company at foreclosure sales early in June. Stock of the new company was given in exchange for that of the Red River Valley Company, controlling the Red River boats and the little line from Crookston to Fisher's Landing, and for that of the Red River and Manitoba Company, controlling the line between Breckenridge and Barnesville.

At this time the total mileage of the system was 667 miles, of which only 565 were completed, and

"He would accept no salary. The profit on his investment in the property, he said, was sufficient compensation for his services."

The balance under construction. The capital stock of the new company was limited by its charter to \$20,000,000; and enough was issued immediately to the associates to pay the sum they had disbursed, and the rest to Mr. Barnes as trustee, until such time as the preliminary financial operations should be completed. There were also authorized at this time, June 21st, mortgage bonds for construction and improvement to the amount of \$8,000,000 at 7 per cent., with the proviso that the total amount of bonds outstanding should never exceed \$12,000 per mile of completed road. In September another bond issue of \$8,000,000 at 6 per cent. was authorized. It is an interesting fact to note this drop of one per cent. in the rate that had to be paid on the second bond issue as compared with the first, with an interval of but three months between. So rapidly did the credit of the new enterprise establish itself.

In October all the stock and all the bonds that had been authorized, \$15,000,000 of the former and \$16,000,000 of the latter, were formally turned over by the directors to the four associates in payment for moneys, stocks, bonds, and other properties furnished by them for the purchase or construction of the various lines. The first bond issue went to settle with the Dutch bondholders, and such others in this country as had been or could be reached. All possible outstanding obligations were gathered in. All of the second bond issue that was not held as working capital for the new building already under way went to cover outlays of the previous year.

CLEANING UP OLD DEBTS

In that year, 1878, before the new company had been or could be organized, 112 miles of track were built, and this was exceeded the year following. Much equipment was purchased. All these expenditures, met by money or credit furnished by the associates, had now to be made good by the company. The sum provided was none too great.

"He had studied water just as carefully as he had land transportation. He looked at both from the same angle of vision—cost of operation."

Mr. Hill had been made general manager of the system in June. Everything was now in working order. An indebtedness of the old companies amounting in all to about \$44,000,000 had been extinguished. The new company started with a total capitalization in stock and bonds of \$31,000,000. It remained to be seen whether it could carry this and put real values behind the paper, or whether it would be added to the long list of railroad fiascos in the Northwest; in which case the associates still stood to lose all they had ventured and hoped for. For there was not one of them faint-hearted enough to unload his burden on anybody else, now that such a course had become possible. Indeed, those on the inside hugged to themselves their knowledge of the intrinsic value of this property which was going to bring them "wealth beyond the dreams of avarice."

BUILDING A MILE A DAY

For the first fifteen years after Mr. Hill took charge of this system, one mile of railroad on the average was built and equipped for each working day in the year. And, while this nerve- and muscle-racking construction, with all the problems it involved, was going on, policies of every sort had to be determined and forces of the most diverse character set in motion or restrained.

The new railroad system, relieved of its past and now under the direction of the man who was to prove himself the ablest manager that this country has produced, increased its net earnings over the year immediately preceding more than a million dollars, or 54 per cent. The net earnings were more than 60 per cent. in excess of interest on the bonded debt. There were, March, 1880, only a little more than \$2,000,000 of the old bonds still outstanding, and these

"We consider ourselves and the people along our line as copartners in the prosperity of the country we both occupy; their adversity will be quickly followed by ours."

"He never permitted a dividend to be passed. The stock of his company was as good as its bonds."

Other interests were looked after just as carefully. For example, there was a

were speedily acquired or extinguished. By October 14, 1880, Mr. Hill could write: "Yesterday we hauled 130 carloads of wheat into Minneapolis. This would have been considered good receipts in Milwaukee ten years ago." Two hundred miles of new line in Dakota were being built at the rate of a mile and a half per day, while steel was being put down on the main line at the rate of two miles per day. Two short lines in Minnesota, useful to round out the system, were bought. By the end of the year Mr. Hill can say, in a letter dated December 28th, "We have under contract for next year about 225 miles, which will give us, say, 1,090 miles of railway every mile of which is in good local country and about half of it in the Red River Valley. . . . During the past eighteen months we have laid 26,000 tons of steel, and already have 12,000 bought for next year."

There must, of course, be a larger financial base for a system growing like this, every mile of new line being a money-bringer from the start; so it was ordered by the board of directors in October that there should be issued \$6,000,000 of 6 per cent. bonds against lines thereafter constructed or acquired in the Territory of Dakota. There are few instances where a newcomer has conquered so quickly a position so honorable as that of the new system in the financial world. Mr. Hill writes to Mr. Angus on October 14th: "I received your message to-day advising of offer made by Winslow, Lanier & Co. for our bonds, which is, as I wired you, entirely satisfactory to me, if yourself and Mr. Stephen who are on the ground think well of it. I am sure it is gratifying to have our bonds well received as those of the Chicago & Northwestern, especially as our company is comparatively unknown."

"I told Mr. Kennedy I would not vote again for any one as director who did not once a year examine the property and its affairs so that his opinion would be of some value in its councils."

double purpose in having more than a close connection with the milling business at Minneapolis, now the most important single business interest in the Northwest. Mr. Hill never lost sight of the farmer, or of keeping him out of the grip of people who would squeeze his last dollar from him and drive him discouraged from the soil. He meant to see that the farmer had a fair show in the marketing of his grain. Then, a share in the control of mills meant a large freight carriage, of raw material into Minneapolis and of the manufactured product out. It was good business for the railroad; and it helped to get a lot more in other ways, especially to keep the railroad from getting the worst of it in the exchange of business with systems running east from St. Paul. So the water power, on which the mills still depended, was acquired.

Without a moment's rest, too, went on the preparations for the westward march. No matter how pressing matters were at home for Mr. Hill, he was always gathering and storing in that wonderful memory of his every fact that could be of service in the projected extension of his system to the Pacific. Still hardly more than warm in his seat of power, this letter, written November 24, 1880, to Paris Gibson, years afterward to become United States Senator from Montana, is eloquent of Mr. Hill's plans and methods.

"It will give me great pleasure to see you during the coming winter and to hear from you a description of northern and western Montana. If it is not too much trouble you can get me a description of the country lying at the foot of the mountains between the Missouri River and latitude 49, for a distance of one to three hundred miles and as far east as you can get information; also the number of cattle now in the Sun River, Teton, and Marias River valleys, and any other information that you think will aid me."

The through line of the rival Northern Pacific was com-

leted by 1883, by the driving of the last spike in western Montana. Here was

real transcontinental operation, while as yet the Manitoba (as Mr. Hill's road was still called) was but part way across the country.

Mr. Villard's most dramatic stroke had been the consolidation, in 1882, of the Northern Pacific interests and those known under the name of the Oregon Railway & Navigation Company. By this he secured control of what was then the most powerful concern in the Pacific Northwest, eliminated river competition on the Columbia, whose steamships were included in the deal, and obtained a right of way and an entrance for his system into Portland, then the only city of importance on the North Pacific Coast. The Northern Pacific, including this adjunct, was something to be feared. But it had no terrors for Mr. Hill. He knew its financial condition, notwithstanding the recent reorganization and apparent plethora of cash. Better yet, he knew its operating conditions. He was in no hurry or fret, because he knew that every day reduced the power of the Northern Pacific to carry its own burdens, and hence minimized the danger of that road as a competitor.

"LOW COST OF OPERATION"

He had not long to wait. Three months after the celebration connected with the completion of the Northern Pacific, which filled the newspapers of Europe and America with accounts of the elaborate display on that occasion, Mr. Villard personally and the Oregon Railway & Navigation Company and also the Oregon & Transcontinental disappeared together in the gulf of bankruptcy. Mr. Hill knew all the time what his own line could do when he had it finished to the coast. At this time, when he was still apparently a novice in the business, he would take a piece of paper, show exactly what it cost to haul a loaded car over the grades of the Northern Pacific, what it would cost over his own line with the grades and curves that he had fixed as

"There is no substitute for hard work."

"I find it pays to be where the money is being spent."

the maximum, add up the fixed charges and the cost of operation per mile of the two systems, and ask his listener with a grim smile what he thought was likely to happen when the fur should begin to fly.

In a letter written by Mr. Hill to Mr. Kennedy in 1883, he says: "I think the time is at hand when railway property generally will be tested to its capacity to pay net earnings, and we have some neighbors who will surely have difficulty in making both ends meet. I think the Northern Pacific will have its greatest trial when its line is built through and its finances are no longer sustained by sales of bonds, but all payments must be made from earnings; then I think they will need help much more than at present. . . . It is at such a time we want to have our house in order and I think you will find it well advanced in that direction."

And how closely he believed a man should watch his business in its formative stage is indicated by a letter he wrote in 1882 to Mr. Stephen in which he says: "Our property is nearly all new, and unlike old roads, whose staffs have been doing the same things at the same places for years. A failure to take in the whole situation owing to lack of knowledge or judgment, and under plea of temporary convenience or some other cause—matters are given a wrong direction and in the hurry of increasing business a precedent is established which is hard to change, or it is entirely overlooked and a permanent injury is the result. Every day's observation convinces me that in a new country a railroad is successful in the proportion its affairs are vigilantly looked after. There is no substitute for hard work, and the value of a railway is its capacity to earn money."

Through these years, again, there is continuous evidence of this oversight

"After providing for fixed charges and a dividend of 6 per cent. on capital, all surplus income was required to be placed to the credit of a Reserve Guarantee Fund, until the total should amount to 2½ million dollars."

"We do not care enough for Rocky Mountain scenery to spend a large sum in developing it. What we want is the best possible line, shortest distance, lowest grades, and least curvature."

almost preternaturally specific and acute. It is difficult enough to understand how time was found for the big things; but when one reads volumes of letters and reports dealing with the lines almost microscopic, the wonder grows. In these old letters and diaries, nothing escapes notice. There are "coal stains in the depot at Grand Forks." Here is a list of a few of the things that Mr. Hill stored in his memory as he was rushing up and down the line, and set down in memoranda for his own future guidance or to be taken up with the proper parties at the proper time; location of gravel pits, side tracks, water tanks, lay of the country with reference to the line, condition of crops, rough places in the track, condition of track joints, where cars were standing unloaded and idle, wasted effort by hauling in gravel when the same material might have been obtained from the side of the track, ditches. A note says that everything lying around but not needed for operation must be picked up and put away; odd lengths of iron that cannot be matched and made useful should be gathered up and sent to market; "platform east end of depot wants one eighteen-foot plank for repairs." In the same paragraph and line are a memorandum of an important bond election about to take place and a remark that the engineer has dumped his fire on the ties and burned them out in two or three places. "Memo. One car repairer here, this man smells of whiskey." Spikes, frogs, and box lids lying about are listed for collection. Here is a report that a certain engineer has been kept on his engine too long without sleep, which ought not to happen; and there the entry, not from a section

hand, remember, but from the real boss of the concern, that "flat 1269 has two broken truss rods and should be repaired."

And scattered through all these pages are rough drawings of station buildings, round-houses, yards, tracks, switches, that indicate an almost photographic imprint in the mind of the man who made them of every accessory of the whole system.

FINANCING AS ONE GOES ALONG

The time was now ripe for placing the finances of this system on a broad and permanent foundation. Heretofore money had been raised by the issue of securities or taken out of earnings, as and when it seemed best. A coherent financial policy could be supported by and was necessary to a railroad company with business and prospects such as this could show. Therefore, in 1883 the board of directors of the Manitoba formally authorized an issue of \$50,000,000 6 per cent. consolidated bonds. These were secured by mortgage on all the company's lines, built or thereafter to be constructed in Minnesota and Dakota. Of this total, \$19,426,000 were reserved to retire prior bonds, \$10,574,000 were to be issued immediately, and the remaining \$20,000,000 were to be issued only against future construction, and then at a rate of not to exceed \$15,000 per mile, although the cost per mile often rose as high as \$25,000, exclusive of the large sums paid out for terminal facilities. The issue of ten millions which the stockholders were permitted to buy in at ten cents on the dollar has been attacked. Let the facts speak for the truth, whatever it may be. The facts are these:

During the years of very rapid growth and of necessity to participate in many allied interests, the money of the stockholders, which might and ordinarily would have been distributed among them in the form of dividends, had been withheld and used for company purposes, to the amount of not less

"This railroad enterprise was for him no speculation. It was a great constructive work, whose future he had gauged. If he was right, then it must also be one of the most splendid opportunities for investment that this country ever offered. As such he held it."

han \$11,000,000. In the period between 1880 and 1883 the mileage of the system was nearly doubled, by construction and purchase. In addition to that all the old lines were practically rebuilt, by the substitution of steel rails for iron. Equipment was quadrupled. And there were immense subsidiary enterprises, like the interest in the St. Anthony Falls Water Power Company, the building of the stone arch bridge and union depot, the interest purchased in the St. Paul & Duluth, the building of new shops at a cost of half a million dollars, and a dozen other things for which the cash and credit of the company had been used.

It was cash belonging to the stockholders. And, in addition, a surplus of \$5,671,976 had been accumulated, in pursuance of Mr. Hill's consistent policy never to be without this anchor against any possible mischance. In these three years only a little more than \$4,000,000 had been added to the bonded debt, and \$5,000,000 to capital stock. The sums put into the property were more than double the total of the two. Instead of borrowing this difference from outsiders, the management borrowed it, without interest, from insiders; that is, from the treasury of the company, and put it back into the road. The gist of the transaction was stated by Mr. Hill himself, in the letter summing up the story of his connection with the railroad which he addressed to the stockholders on retiring from the chairmanship of the board of directors in 1912.

"The period from 1879 to 1883, when the railroad was still an experiment in the minds of most Eastern capitalists, was not a time to enlarge the volume of securities or ask outside capital to bid for them. All that this could have secured would have been some sales at much below par, and an impaired credit. Yet money must be had to keep going the extension which was creating a new Northwest; and, through that, a prof-

"He never speculated in the railroad's securities or permitted others to do so at its cost. For years he and his friends maintained a cash pool in New York for the purpose of buying in the stock if the bears attempted to raid it.

itable and assured future for the company. So another method was adopted. The company diverted to these uses the money which might have been divided as profits among the stockholders. At one time 210 miles of road were built and \$1,700,000 were spent on equipment without a bond issue. The Company became its own banker while waiting for a favorable market to be created. The stockholders temporarily renounced their profits in order to leave their money in the enterprise. But it remained their money, and their title to it was indisputable. It was costing now very much more than \$12,000 a mile to build a substantial track. In all, about \$11,000,000 of profits were put into new construction and betterments. The stockholder of that day expected these profits to be distributed. His right to them was sanctioned by public opinion as well as by custom and law. It was recognized in 1883."

GOOD CONSTRUCTION, CHEAP OPERATION

It goes without saying that the future extensions of the railroad system were as carefully thought out at this time as was its present operation. There are many volumes of detailed correspondence with engineers in the field, in which proposed locations of lines yet to be built are considered, corrected, changed, with the utmost fidelity to what topographical conditions required. Mr. Hill knew the country about as well as the men outside. And one prevailing principle governs throughout his placing of lines and his instructions to subordinates. In no case is money to be saved by choosing a route less difficult, from the engineering point of view, if this

"Our property is nearly all new. A failure to take in the whole situation owing to lack of knowledge or judgment, and under plea of temporary convenience or some other cause—matters are given a wrong direction and a precedent is established which is hard to change."

"In financing, Mr. Hill believed, first, in the sale of stock rather than of bonds. Where bonds are issued first, much or all of the stock usually goes with them as a bonus. Mr. Hill always declared that every dollar of securities, stock as well as bonds, should have behind it a dollar in cash, material, or service rendered. Secondly, he believed in expanding by employing the cash in hand and taking up the debt with securities afterward."

will entail greater cost in operation. The cost of one method is paid for at first, once for all. The second is a continual annual charge on operation. To minimize the latter was the keynote of Mr. Hill's policy as a railroad man. He writes, a little later, to Mr. Stephen: "We are now reducing our grades so that we can haul 700 to 800 tons with one locomotive. . . . Of course, this all costs money and plenty of it; but I think it the very best way to protect the property."

During these years the old lines of the Manitoba were revolutionized. The whole system was being made to conform to that definite standard of construction which was dictated to Mr. Hill's mind by relative cost of operation. The following, from a letter dated April 9, 1884, describes what was being done: "During the past two years we have spent a great deal of money for steel rails, ballasting track, transfer yards, terminal facilities, new equipment, new shops, and in fact have put the road in better condition than any railway similarly situated that I know of in the West, and consequently are to-day enabled to operate our road at a lower rate of expense. We have now over one thousand miles with a 26-foot maximum grade and only 220 miles with over a 30-foot maximum grade. The latter we expect to reduce to 26 and 30-foot maximum within the next two years. When this is done no railway in the world of one thousand miles or more will have the same low gradients."

THE RUSH WESTWARD

In January, 1886, the Montana Central Railroad Company was organized, ostensibly to connect the new town of Great Falls, built at a water power from which big things were hoped, with Helena, Butte, and elsewhere in the territory that it

might elect. The Montana Central was, to all intents and purposes, James J. Hill. It was organized to occupy the Montana field until the Manitoba should be ready for the rush westward from

Minot which was to break the world's record for railroad building. When, the next year, that rush came, the same contractors who had made a record in the building of the Canadian Pacific were employed here. Mr. Hill knew what could be done, and he exacted it mercilessly. Not only grading but bridging was done ahead of the track layers, so that the rails were shot out and spiked down with amazing rapidity. Mr. D. C. Shephard, the chief contractor, has preserved in a memoir a concise description of this performance as an engineering feat: "In the year 1887 our firm constructed 1,175 miles of railroad, of which the remarkably rapid construction of the St. Paul, Minneapolis & Manitoba Railway from Minot to Helena formed a part. The track laying on this great work was commenced five miles west of Minot, April 1st, and was completed to Helena November 18, 1887, a distance of 643 miles and at an average rate for each working day of $3\frac{1}{4}$ miles."

A year later Mr. Hill reports upon the performance of the completed work. As always, the method of building, with relation to operation, comes first in his thought. "Reference has heretofore been made to the exceptional character of this line as to grades and curvature. With the exception of eighteen miles of temporary line the maximum is 31.7 feet to the mile, and on about 400 miles of the 550 from Minot to Great Falls the maximum is only twenty-one feet to the mile." In like manner he notes that the line from Helena to Butte "is laid with steel rails of seventy-five pounds per yard section, and white oak ties have been laid on all the curves." He built for permanence, but he also built to carry business.

He recommended this in his report of June, 1884. "In view of the large ex-

expenditures that require to be made from time to time for replacement of iron with steel, purchases of equipment, and other permanent improvements, it has been deemed wise by the directors to set

aside a fund to specially provide for these extraordinary expenses when they occur, and it is their intention in the future to set apart there in each year such sum as the earnings of the road will justify, until this is ample for any contingency." In December of the same year this was carried formally into effect by the directorate. After providing for fixed charges and a dividend of 6 per cent. on capital, all surplus income was required to be placed to the credit of a "Reserve Guarantee Fund," until the total should amount to two and a half million dollars. This amount was held perpetually at command; one million being in bonds of the company, and the remainder in cash or securities at the option of the board. It was a "dread-naught" of immense offensive and defensive power in a time when railroad managements generally were willing to live from hand to mouth, little able to resist the temptation to distribute all their surplus revenue immediately, and hence almost unprotected against a lowering of the financial barometer.

BIG SHIPS AND LOW RATES

While he was stealing a march on his competitors in Montana, he was doing the same thing between St. Paul and Chicago, and between the head of the lakes and the Atlantic Ocean. He had studied water just as carefully as he had land transportation. He looked at them both from the same angle of vision—cost of operation. Just as he saw that high grades and sharp curves must be avoided, so he saw the waste in small ships, filling their peddlers' packs with grain at Duluth and Superior, taking almost as large a crew to handle them as would boats several times their size, wasting fuel, wasting time, wasting everything. He prepared to run his own

"One prevailing principle governs throughout his placing of lines and instructions to subordinates. In no case is money to be saved by choosing a route less difficult, from the engineering point of view, if this will entail greater cost in operation. The cost of one method is paid for, once for all. The second is a continual charge on operation. To minimize the latter was the keynote of Mr. Hill's policy as a railroad man."

steamships on the Great Lakes; and by 1889, when his railroad was completed to the terminals and docks there, the ships were ready for them.

The Northern Steamship Company was formed, in June, 1888, as an adjunct of the railroad company. Its boats, which began to run in 1888 and 1889, established a new standard of size and efficiency in lake transportation. The Manitoba assigned to it its interest in six steam freight vessels for which it had contracted. The latest improvements were adopted in machinery for loading and unloading. New records were made in the dispatch of grain and flour from the head of the lakes to Buffalo and other lake ports. Mr. Hill himself has described, in his "Highways of Progress," the revolution wrought in lake traffic: "A vessel that carries only 1,000 tons cannot compete with a box car. With a steamer carrying 10,000 tons you have it beaten. This is the key to the only growth that has taken place in our interior commerce. Twenty years ago the largest carriers on the lakes that could pass through the old 'Soo' Canal, with its fourteen-foot locks, were of about 3,000 tons. The canal was deepened to twenty-one feet, and now an ordinary load is from 10,000 to 12,000 tons. This explains the wonderful growth of lake commerce referred to. The difference in cost between the operation of a boat of 3,000 and one of 12,000 tons is only so much as will cover the employment of two extra firemen, two more deck hands, and the purchase of about ten tons of coal additional per day; in all, some \$28. At this slight extra expense the carrying power is quadrupled. Hence the phenomenal expansion of lake commerce within the last twenty years, while this change in its carrying machinery took place." That theory he put in prac-

tice in the boats that he caused to be constructed for business on the lakes. The Northern Steamship Company's six steamships were 310 feet long, 40 feet beam, 26 feet depth. In 1888 they carried 939,162 bushels of wheat, and 1,214,519 in 1890. Channels were improved, ships were enlarged, and the tonnage grew until Duluth-Superior became one of the world's great shipping points. So it came about that, after twenty years, Duluth and Superior were able to handle, in seven and a half months of open navigation, more business than any other port of anything like its population in the world handles in twelve.

The railroad became independent of other carriers on the lakes. When they began to try to head off this dangerous adversary by pooling the Buffalo wheat elevators and raising charges so as to grab the profit away from railroad and farmer alike, Mr. Hill put his mind on the job, invented a new steel elevator which was a marvel of cheapness and efficiency in operation, built one at Buffalo, just to show what he could do, gave warning that he would have fair treatment or build enough elevators to handle the whole wheat transfer business at that point, and remained master of the situation. From that time there was never a question of the ability of the railroad to get its consignments to markets outside of its own territory quickly and cheaply; or of the protection of its patrons against being gouged by connecting lines or deprived of the advantage of local rate reductions.

PROTECTING STOCK AGAINST RAIDS

There are continual flashes through these years of illuminating ideas about the railroad and its conduct. A first principle of Mr. Hill had been to keep out of the stock market. He let others do the speculating, and was content that his interest in the property should take care of itself. But as knowledge of this attitude leaked out, it encouraged some of the free lances. The Manitoba was like an unvalled city in the Middle Ages. Speculators began to look at it and at one another and say, with the gray wolf, "good hunting." By the middle of 1887 there were 581 stock-

holders in the Manitoba. In the fall there was a depressed market for all securities, and severe attacks were made on the stock. So Mr. Hill receded from his first position enough to say to Mr. Kennedy: "While we have both always considered it was not our duty to keep the price of the stock in the market at or near any particular figure, I feel that the stock is worth more money, and that if we can stop the raiders from selling down so low as to make some of the more recent purchasers afraid to hold it, the effort will be worth making." This continued to be the policy enforced by a few painful lessons to those who thought Manitoba a good stock to play ball with. In time of panic as well as in the flush of prosperity, quotations of this security always seemed to have written after them in invisible ink the familiar legend, "cave canem"—beware of the dog!

DIRECTORS MUST DIRECT

Two letters from Mr. Hill in this period express in his emphatic way his idea of the sort of responsibility a man assumes when he sits on a board of directors. Mr. Kennedy had suggested the name of a prominent New Yorker as one that would be valuable to add to the list of directors of the Manitoba. Mr. Hill takes the matter up with Mr. Stephen in this emphatic way: "I told Mr. Kennedy plainly that unless Mr. ——— would agree to spend two weeks at least in every year on the property and would undertake to know its wants I would vote against him; and further, that I would not again vote for any one as director who did not once a year examine the property and its affairs so that his opinion would be of some value in its councils. This may seem almost unreasonable, but I know that our greatest weakness has been a want of knowledge on the part of the Board of the property in its relative position to other lines and the reasons that should guide its business policy. I am, as you know, not ambitious, and I assure you that unless the stockholders elect directors who will give the company's affairs time enough to understand them, they must get some one else to take the responsibility besides me."

To a high official of the St. Paul & Du-

luth Railroad, in which, as has been shown, the Manitoba had a strong holding, and which was proposing to do a little "high financing" for the benefit of the several systems interested, Mr. Hill sent, in 1886, this vigorous reply: "A sound, careful business policy has brought the road out of its difficulties to a position where it has made some money for its stockholders, and if this policy is continued the time does not seem to be far distant when it will be able to pay a dividend to both common and preferred; but if a majority of the stockholders, who are the real parties in interest, owning the property, desire to get something for nothing, there is nothing to compel me to sit on their Board of Directors and I will certainly refuse to have any further connection with any plan looking to the injection of more fictitious capital into a company that already has \$20,000 a mile more than it ought to have."

THROUGH TO THE PACIFIC

In 1890, the idea of completing his railroad to the Pacific Coast—and becoming a transcontinental line—passed out of the stage of years-long calculation and became a positive resolution. Many people thought that ambition or vainglory, the unregulated eagerness of a man distinguished in his specialty, had made the project of a transcontinental line a sort of mania with him. They still judged him as they did when he was talking "St. Paul & Pacific" to anybody who would listen. His plan, in fact, was the product of a logic as hard and cold as the steel of his railroad's track. He knew how much the other transcontinentals must pay out each year in fixed charges, and what it would cost them per ton per mile to haul freight over their grades and around their curves. He proposed to build, and had built thus far, across the continent a railroad so modestly capitalized as to keep its interest charge greatly below that of any competitor; and with grades and curves so moderate that the cost of movement could always be less than theirs. In short, the new system was prepared, if need be, to take business at a rate below the actual cost for any of the other lines, and to make money while doing so. Here is his general

order to his chief engineer in the summer of 1890: "We do not care enough for Rocky Mountain scenery to spend a large sum of money in developing it either on the Spokane or elsewhere. What we want is the best possible line, shortest distance, lowest grades and least curvature that we can build between the points to be covered."

The Seattle & Montana Company came into existence to open a way to the Pacific. By working through companies locally organized, terminals and traffic facilities for the new lines could be secured at a much lower price than if the parent company had gone into the market after them, with the necessary flourish of trumpets; and the true purpose could be kept much longer concealed from rivals, who could not be certain what was behind projects apparently of a purely local organization and interest. The Seattle & Montana Company had been organized in 1889 under the laws of the state of Washington. Seattle was selected for the chief terminus on the Pacific Coast, and it was decided that a line skirting the shore from there north to the Frazer River should be built or acquired. The New Westminster Southern Company was incorporated in April, 1887, to build from the international boundary to New Westminster. It was sold in 1905 to the Seattle & Montana, and so, by purchase and construction, a through rail line of about 150 miles in length was built up, from Seattle to New Westminster, in British Columbia.

DEVELOP LOCAL INDUSTRIES

Construction was also begun on the heavy work which had to penetrate the maze of lower ridges and zig-zag across the summit of the Cascade Mountains. Mr. Hill closed a deal with the Union Pacific in 1891 for a joint ownership of the line from Seattle to Portland, and paid a million dollars toward the uncompleted work which it would require four millions to finish. It was at a time when "money talked," and he had the money; for the reason, among others, that he had built a commercially profitable machine.

Before the line to the Coast was built, one more thing remained to be done. This was to perfect a general organization

adequate to the demands of the future. The old St. Paul, Minneapolis & Manitoba Company had been a serviceable tool. It had done its work. But, as Mr. Hill put it, "it had outgrown its clothes." The title itself, exactly fitting the original plan, was already a misnomer, and would be more so as applied to a transcontinental system. The original limitation of capital stock to \$20,000,000 was a strait-jacket for a system that must assimilate the capitalization of the big separate companies under which construction in the West had been carried forward. Mr. Hill desired to build new lines from stock proceeds rather than bond sales, giving him a clear property and a basis for future credit issues if that became desirable or necessary. He meant that capital stock should mean actual money put into the property. The needs of the new day demanded an instrument more flexible and of wider reach. So the Great Northern Railway Company was organized in 1889. A meeting of the stockholders of the Minneapolis & St. Cloud Company, whose charter has been mentioned in the early part of this history as one favorable for an organization with liberal powers, changed its name on September 16, 1889, to the Great Northern Railway Company. On November 11th of the same year the new company accepted the terms proposed by the Manitoba Company for the transfer of its property. The stock was made \$40,000,000, half common and half preferred. The property of the "Manitoba" was leased for 999 years on an agreement to pay interest on all bonds outstanding and such as might be issued, 6 per cent. dividends on the old \$20,000,000 capital stock, and taxes and assessments. At midnight, January 31, 1890, the Great Northern became the controlling power. There were transferred under this lease 2,770 miles of road, with all the appertaining properties incidental to operation. In the tale of American railroads of the time, it would be hard to match this low capitalization.

On June 9, 1890, the Great Northern "requested" the Manitoba to extend its lines westwardly from some suitable point in Montana to Puget Sound, and the

request was formally approved by the latter two weeks later. The first annual report of the Great Northern, for the five months ending June 30, 1890, showed net earnings of more than a million and a half. Two extracts from that report set out vividly the business policy of the management, and the operating ideas on which it was based.

"When the Pacific extension has been completed, your company will have a continuous rail line from Lake Superior, St. Paul, and Minneapolis to the Pacific Coast, shorter than any existing transcontinental railway and with lower grades and less curvatures. Its cost and capitalization will also be much less than those of any other line to the coast. It is expected that, with the foregoing favorable conditions, the heavier products of the Pacific Coast region, which up to this time could seek markets only by ocean routes, can be moved eastward to the older sections of the country."

Active work on the Pacific extension commenced in August, 1890, and went ahead without intermission. Once the decision was definitely announced, the track was pushed forward with as much energy, though, of course, not with the same breathless speed, through the passes and over the crests of the mountains as it had been across the plains.

The financing of his railroad throws a bright light on Mr. Hill's principles of business. Taken as a whole his devices suggest two principles then distinctive in American finance.

First, Mr. Hill believed in recourse, so far as possible, to the sale of stock rather than of bonds. Where bonds are issued first and a railroad is built from the proceeds, much or all of the stock usually goes with them as a bonus. Mr. Hill always declared that every dollar of securities, stock as well as bonds, should have behind it a dollar in cash, material or services rendered.

Second, he believed in expanding the railroad system, whenever it was possible, by employing cash in hand; using the proceeds of his splendidly prosperous property, and taking up the debt with securities afterward.

[The next article will tell in Mr. Hill's own words of the Hill-Harriman fight]

JOHNSON, OF CALIFORNIA

THE NEW SENATOR AND THE REMARKABLE ACHIEVEMENTS OF HIS ADMINISTRATION AS
PROGRESSIVE GOVERNOR THAT CAUSED HIS PROMOTION
TO THE UPPER HOUSE OF CONGRESS

BY

BURTON J. HENDRICK

THE election of Hiram Johnson to the United States Senate, by a majority of 270,000, is an event that has greater than local significance. What explains his amazing hold on the people of California? Has he any qualities that make him possible as a national figure? Certainly Johnson has heaped up plenty of material for a review of his career. I can recall no other American governor who has had an existence which has been quite so full. For nearly ten years Johnson has led the most active public life. He was the central figure in one of the most sensational graft prosecutions in our annals; he led the wonderful popular movement which re-deemed the great Pacific state from the rule of the Southern Pacific Railroad; and as governor he obtained the passage of the most complete radical legislative programme any state has known. He was one of the organizers of the Progressive Party and served as its Vice-Presidential candidate in 1912. He has twice been elected governor of California, for four-year terms, in face of the tradition that limits a man to only one. Certainly here we have no mushroom political growth, and the fact that California approves this career by sending Johnson to the United States Senate with a popular majority, which, so far as I know, is unprecedented, gives it an interest that extends to the Atlantic Coast.

Whatever else he may be, Hiram Johnson is a thorough Californian. There is not a critical episode in his life that has not had its habitation in that beautiful state. He was born there—in 1866—in that very city, Sacramento, which has been the scene of his greatest triumphs; he received his

education at the University of California; he married a California girl, the daughter of one of the pioneers; he made his reputation as perhaps the greatest trial lawyer on the Pacific Coast as a practitioner in San Francisco. In his college days Johnson stood out conspicuously as a man of vigorous mind and indomitable leadership. For years he had played his part, merely as a private, in California politics, and he had had better opportunities than most to study the political methods of the dominant power. He furnishes a profitable study in heredity. His own father, Grove L. Johnson, also a man of alert mentality and ingratiating leadership, had served for years as a willing tool of the Southern Pacific in the Sacramento legislature. Grove L. Johnson enjoys an evil fame in his native state. "The long continuance in the legislature," said a native historian in 1910, "of this adroit and malevolent man is one of the heaviest burdens carried by California to-day." Indeed, when Johnson began his life work exterminating this Southern Pacific influence, one of his toughest political opponents was his own father.

Just as the children of drunkards are likely to become teetotalers, so Hiram Johnson, as soon as he began to think at all, conceived the bitterest hatred for the kind of politics in which his father had played his part. But he did little in a public way until the graft prosecutions. The East has not yet forgotten the stories that came out of San Francisco ten years ago; stories of municipal looting and municipal partnership with the underworld that would have done credit to Tammany Hall in its most successful era. The activities of Abe Ruef and Schmitz

and the United Railways, indeed, reached a depth of sordidness almost unparalleled in American cities. That was a time that called for the best energies of all good citizens, and Johnson gave his in good measure. He served as counsel in the graft prosecutions and then, when Heney was shot, he took charge of the entire proceedings, securing a conviction that sentenced Ruef to a long term in the San Quentin penitentiary. This was the employment that made Johnson's name known all over California; the energy and ability displayed on this occasion, as well as the intense devotion to the commonwealth, made Johnson the inevitable leader of the great contest that followed the scandals in San Francisco.

THE RAILROAD THAT RULED A STATE

The Nation has made such progress in the last six years that the issue which then excited so many states, that of corporation rule, is becoming somewhat dimmed in the public mind. But this issue stimulated many important political careers—Roosevelt, La Follette, Hughes, and Wilson, for example. New York, New Jersey, and other states had all had corporation rule, but I doubt whether any community had so completely lost its political identity as California. Fifty years hence the historian, seeking his ideal illustration of this era in American politics, will necessarily find it on the Pacific Coast. The state of California for many years had not been a republic, far less a democracy; it had been as complete an autocracy as Prussia itself. The controlling dynasty was the Southern Pacific Railroad, the heads of which—first Huntington and afterward Harriman—ruled it from their offices in Wall Street. Any man who wished to go to the legislature had first to visit, hat in hand, some Southern Pacific representative in San Francisco; when elected, his only business was to obey instructions. The legislature was not composed of men, but of voting machines. The utmost demoralization resulted. What this control meant in local affairs the Ruef-Schmitz régime had shown; what it meant in the state was evident in a smothered citizenship, inefficiently and expensively con-

ducted state departments, in the absence of enlightened legislation for the popular welfare, in corruption that made legislation merely a matter of bargain-and-sale.

CALIFORNIA'S REVOLT

But the mass of Californians, like the mass of Americans everywhere, revolted at these conditions. The Ruef-Schmitz proceeding, the appearance of better things in other states, the growing reassertion of popular sovereignty everywhere, were making their influence felt. From 1905 to 1910 certain new words became part of our political vocabulary, especially in the Western states. Such things as the initiative and referendum, the recall, and the direct primary became popular magazine topics as well as practical instrumentalities of onward-marching democracy. Talk even of recalling judges shocked the ears of Conservatism everywhere. States bestirred themselves for employers' liability, shorter hours of work for men and women, laws restricting the employment of children, and the words, "social justice," began to assume that concrete form that afterward formed the basis of a new political party. Some of these new ideas had little value as governmental agencies and represented little more than a popular protest against existing things. The initiative and referendum, as ideal methods of conducting government, were, as President Wilson informed his college students, all "bosh"; as temporary expedients for restoring popular rule, however, and starting it going on a real scientific basis, they had great value. One of these reforms that has swept over the whole country, and probably taken a permanent place in our party machinery, was the direct primary. The new Progressives of California now included all these "new fangled notions" in their political armory. Public sentiment for the direct primary became so insistent that even the political bureau of the Southern Pacific became alarmed and, "pandering to decent sentiment" of California, permitted it to become a law. In doing this, the Herrin machine believed, it was merely throwing a bone to the wolves. Once they obtained it, the "mob" would quiet down and things would go on

much the same as before. They granted it precisely as all autocrats have bestowed liberal institutions on the populace—in face of a growing spirit of revolt. But, when they permitted the direct primary bill to pass, these California Bourbons and Romanoffs sealed their own fate. For it made possible the career of Hiram Johnson and established liberty in the state.

THE LINCOLN-ROOSEVELT LEAGUE

The *sans-culottes* of California had organized something which they called the Lincoln-Roosevelt Republican League. It consisted, at first, of only a few dozen citizens and possessed a platform that had the merits of breeziness and conciseness: "Kick the Southern Pacific Railroad out of California." It inspired inextinguishable laughter in the railroad-dominated legislature. One day, in 1909, a member was hailed before the bar to receive the nominal punishment for absenting himself at quorum. "I sentence the member," the speaker said, amid howls of mirth, "to join the Lincoln-Roosevelt Republican League." "I object, Mr. Speaker," said a wit from the floor, "to the punishment as unusual and cruel and, therefore, unconstitutional." In truth the Lincoln-Roosevelt League, in its early days, did move somewhat vaguely, in doubt as precisely how to use the new means to freedom. One day a California leader ran against Senator Bristow in Washington. "Haven't you got some man in your state," said this Kansas Senator, "who can get into an automobile and make a complete tour in every county and talk directly to the farmers? That is the way we do it in Kansas." The Lincoln-Roosevelt League began to look for such a man. It didn't require much looking, for Hiram Johnson was clearly the person "indicated."

Johnson now gave the country a new type of political leader. Young—he was then only forty-four—rather handsome in appearance, with a round, florid face topped by brown hair, rapid in his movements, with a gift for staccato oratory and a fine aptitude in personal appeal and invective, he now started out, backed only by a handful of men in the Lincoln-Roosevelt League, to capture the Republican nomina-

tion from the Southern Pacific machine. His working capital was merely his energy and enthusiasm; his means, that direct primary which the supreme rulers had granted a turbulent people. Under this direct primary the voters themselves selected the party candidate, the old convention ceasing to exist. The California Republicans, therefore, faced the direct issue: did they wish the Southern Pacific dummy for their candidate, or a man like Johnson, whose platform was the violent ejection of that corporation from political power? The Southern Pacific had all the traditional strength—it controlled the Republican organization in every county, it was firmly entrenched in power, it had unlimited money and a not over-sensitive conscience about methods of spending it. Johnson had only a few acknowledged supporters and his own determined spirit.

IGNORED BY THE PRESS

There was only one thing to do—to take his cause directly to the populace. Only a face-to-face meeting with the people could carry the situation against these tremendous odds. Johnson went out, like a Salvation Army revivalist, in the pursuit of political souls. His business was that of the exhorter; like the religious revivalist, he stood spouting at street corners, inviting the wayfarer to step up and be saved. Neglected by the newspapers, who regarded his queer, "undignified" enterprise as unworthy of attention, he left quietly for the northern part of the state, sections where there are no railroads, and began his Billy Sunday sermons under the shadow of Mount Shasta. He first talked heart to heart to farmers, in a little town that had never seen a political candidate before. For some time he kept up this life of an itinerant preacher, no one, excepting a few intimates, knowing anything about it. Not a line concerning his activities appeared in the newspapers. He had been denouncing the Southern Pacific Railroad for several weeks before this corporation had any inkling of the fact. But gradually the movement began to grow. The campaign funds increasing, Mr. Johnson now hired an advance man, who went ahead advertising the meetings, and San Fran-

cisco papers now sent reporters to send daily reports of the progress. In a month or two the Johnson procession had grown to be a cavalcade, and the farmers, at the first sign of approach, would leave their fields and hasten to the meeting place. The Johnson party attached cowbells to their automobiles—they were still in country without railroads—and this tinkling signified that Johnson was near by. The receptions increased in cordiality, the gatherings soon becoming almost a riot. Women attended as well as men, and even school children now obtained their first lessons in good citizenship.

"WILL YOU KEEP THE FAITH?"

Johnson, swinging his right arm—almost his only gesture—and talking with all the passion that caused such a ruction at the Chicago convention of 1912, spoke only on a single theme. He had no interest in the tariff, or the currency, or the Philippines. He devoted all his attention to the Southern Pacific Railroad, its domination in California, and the consequent degradation of the state. And he found the people alert and eager. "They were, heart and soul, opposed to the Southern Pacific Railroad," he told me once, recalling the events of this primary campaign. "But I was slow in winning their support. They had been fooled many times by the promises of false prophets and were wary. The thing that affected me most, and stayed with me after the campaign, when I was seated in the governor's chair, was the way the farmers would come, take my hand, and, looking into my eyes, say: 'Johnson, will you keep the faith? If we nominate you, will you do to the Southern Pacific just what you say you will do?' That phrase, 'Will you keep the faith?' is the most impressive question I have ever been asked."

And, according to the prevailing opinion in California—rather strongly emphasized now by a 270,000 majority—Johnson did keep the faith. He has been governor of California now for six years. In that period the state has been transformed. The Southern Pacific Railroad does not now control the government. It gets just as much, and no more, as any other

element in the state—and that is justice. No man who wishes to run for office does obeisance to its political manipulators, and no man's election expenses are paid from its coffers. The legislators legislate as independent, full-grown men. In place of a corporation autocracy, California now has an intelligently led democracy. There is nothing archaic or legalistic about Governor Johnson's conception of his office. He regards himself as having been chosen by the people as their leader, and his leadership, untrammelled by any pedantries, extends to both the executive and the legislative branches. No one, except President Wilson, has exercised this leadership so completely. On his inauguration day Governor Johnson walked to the capitol, unattended by the majestic pomp that usually had accompanied such occasions, and delivered an inaugural address whose every note rang with this new spirit of leadership. Like Wilson in New Jersey, Johnson and his friends had organized an administrative group, which had outlined the Administration's policies and concentrated sufficient support in the legislature to make them law. This group, which had held its meeting in San Francisco, consisted of the Republican State Committee, senators and assemblymen, and editors of the progressive, and even the standpat papers. When the legislature assembled, therefore, it had its programme well outlined. Its purpose was the abolition of the corporation autocracy that had ruled the state so long, and the elevation of the people themselves to supremacy in their government. The reorganization of the state machinery and the administrative departments was essential to this end. But that was not the main purpose—it was only preliminary. Here was California, a state of 2,500,000 people, rich, intelligent, tingling with life, so young that many of the social evils already fastened on certain Eastern communities had had little chance to grow. Certainly this fertile empire presented a rare opportunity for the development of a modern, humane, forward-looking democracy. In the imagination of Johnson and his associates, such a democracy existed not only to fulfil the traditional business of protecting life

and property but to secure as widespread a participation as possible of the masses in the essentials and the comforts of existence. A state in which every man has his fair show at health, education, decent shelter, three wholesome meals a day, an honest return for honest labor, an opportunity for a little enjoyment—this was the new ideal which was about to be tried in this Pacific Coast commonwealth.

A NEW ERA FOR CALIFORNIA

As a method of restoring popular rule, the Johnson Administration adopted those familiar devices, the initiative, the referendum, and the recall. It even accepted the recall of judges. The Southern Pacific Railroad for a generation had practically appointed judges—and recalled them, too, by refusing renominations to the disobedient; and so the fact that now the voters were to receive this power did not shock Californians. But other new legislation probably had more immediate results in purging the state. In order to discourage corporation influence at the polls, the Australian ballot system, which the standpatters in previous years had denatured so that it had borne little resemblance to its original form, was restored. In order to end the office-mongering that had made administration a farce by filling all the offices with incompetent political heelers, the legislature passed a civil service law which made practically all appointments permanent and based them upon merit alone. At the outer office of the State Harbor Commission at San Francisco appears this sign: "All applications for office are referred to the state civil service commissioner at Sacramento"—in itself an eloquent witness of the new era. But the one agency that has relegated the Southern Pacific organization to its appointed place is the new Public Utilities Commission. "For many years past," said Mr. Johnson in his inaugural, "shippers and those generally dealing with the Southern Pacific Company have been demanding protection against the rates fixed by that corporation. The demand has been answered by the corporation by the simple expedient of taking over the government of the state; and instead of

regulation by the railroads, as the framers of the new constitution fondly hoped, the railroad has regulated the state." But the new utility legislation has reversed this order. The Commission has reduced rates, improved service, ended stock-watering, and in other ways compelled the railroads—and not only the railroads but public utilities of all character—to return an equivalent for their franchises.

Other states have done these things; what distinguishes the Johnson Administration is its lengthy programme of social and industrial reform. It has sought to give actuality to that somewhat hackneyed expression, "social justice." In 1914, the Progressive Party published a volume detailing all these achievements; more than three hundred pages were required to describe them all. Naturally the conservative looks upon all this as a welter of radicalism; "the legislature of a thousand freaks," was the term which the scornful in California applied to Johnson's law-making body.

SOCIAL AND INDUSTRIAL REFORM

This social and industrial programme includes all such familiar items as employers' liability, the eight-hour law, for both men and women, conservation, improved tenements, and the like. Governor Johnson followed Governor Hughes's lead in abolishing race track gambling and he has secured legislation intended—the hope is probably a delusive one—to limit prostitution and end commercialized vice. Other laws look to the ultimate adoption of widows' pensions, teachers' pensions, old age pensions, and the minimum wage, and the legislature has passed many provisions for increasing the safety of workers and the public—and abolishing child labor. Probation courts have been established for minors, institutions have been built for the reformation of wayward girls, while elaborate plans have been made reorganizing the University of California so that it may be made to serve the immediate needs of the people. Laws have been passed to protect the public from speculative, stock-selling swindlers, and woman suffrage has become a reality—as the recent election showed. The alien labor act, which caused such a

flutter at Washington, restricting the ownership of property to those eligible for citizenship, is really part of this programme, its laudable purpose being to preserve the soil of California to the white race. Laws permitting municipalities to acquire control of public utilities and to operate them indicate the approach of municipal ownership.

These measures—the list above is far from complete—explain why Hiram Johnson's name shocks the old-fashioned conservative American. His effervescent, almost pugilistic personality, as revealed in the Republican Convention of 1912, has emphasized this impression in still stronger outline. Doubtless much of his legislation is hasty and ill-conceived; precisely how the experiment will end no one knows; it will take ten or twenty years before the effects are apparent. But the mere presence of such legislation shows that Johnson has succeeded in the task he set himself when, six years ago, he jumped into his automobile in the northern part of the state. He has "kicked the Southern Pacific out of politics" with a vengeance. Whether for good or ill, *The People*—this is the way the phrase is capitalized in all Johnson's state papers—rule in California.

MR. HUGHES'S COSTLY BLUNDER

This fact shows the whole calamity of the Hughes proceeding. The Republicans of California to-day are Johnson Republicans. The things which they demand and the political ideas which are precious to them are all found in the legislative achievements of the last six years. For all this time, however, a little Republican side-show has been going on. The men who once ruled the state in the name of the Republican Party and in the interest of the Southern Pacific Railroad controlled the fag ends of the Republican organization until last summer. These men in the latest primary campaign were exerting all their efforts to transform their shadowy power into the substance. Their ambition was to capture the state, abolish the Johnson reforms, and

bring back the autocracy that existed before 1910.

These politicians believed that, backed by the reputation of a man like Hughes, they might deceive the party voters into giving them a new lease of power. It is the tragedy of Mr. Hughes's political career that, all unconsciously, he permitted these discredited politicians to make use of his prestige. His act in ignoring the Johnson element, which was not a faction, as subsequent events showed, but the Republican Party itself, was the one thing that would turn the Republican masses against him. Its practical effect was not to restore the old Southern Pacific régime but to destroy Mr. Hughes and keep him out of the White House. That a man like Hughes, whose political reputation was all made as an advocate of progressive measures—many of them the very things which Johnson had obtained for California—should have been made the victim of such a plot is one of the saddest episodes in our political history. The net result is that the old Republican Party is an extinct animal in California. The name survives, but the Progressives, under Johnson's lead, have captured the organization in every town and county. In this state at least the battle has been fought. In California the Republican Party is an organization that stands for all the advanced ideas already catalogued; that is, it has become the spokesman of radicalism. It has no connection with the party of Barnes, Root, Penrose, Smoot, and their fellows. In sending Johnson to the United States Senate, the Pacific Coast has placed an outpost of this new Republicanism in a position where his voice may produce a national echo. Is it an augury of what is to happen in the next four years? Is the Republican Party in the Nation to transform itself after the California pattern? That is the pressing political question of the hour, and it is because Johnson so personalizes this issue that his career and character have such an immediate interest.

THE QUICK AND THE DEAD ON THE BORDER

A BALANCE SHEET OF THE AMERICAN AND MEXICAN LIVES SACRIFICED ON THE MEXICAN FRONTIER—THE TOLL OF CONTINUING DISORDER AND CHANGING POLICIES—A FEW ADDITIONAL FACTS IN EXPLANATION OF WHY THE PROTRACTED NEW LONDON-ATLANTIC CITY CONFERENCE FAILED TO MEET A SIMPLE ISSUE

BY

GEORGE MARVIN

NOWHERE in the world do ducks fly thicker in autumn than over the marshlands rimming the Yangtze River. Not so many years ago, so the story runs, Admiral Train took his flagship up-river from Shanghai in the golden Chinese October, combining sport with the performance of his patrol duty. Somewhere up-stream west of Nanking they dropped anchor and the Admiral and his flag officers and his guests with their guns disembarked and went ashore.

To their huge disappointment the first day's bag was poor. They got only twenty-eight ducks, but they did get two Chinamen, and on the following morning the widows of the two Chinamen came on board, lamenting and seeking compensation. This episode occurred, as I said, not so many years ago, but it was under the Empire, and after prolonged negotiations the Admiral settled with the widows at eight dollars Mex. per deceased. And all along the China coast and through the river ports a howl went up from the British because the Americans were raising the price of Chinamen.

It is a mistake to think that dead men tell no tales. This is the story of the dead men along the Rio Grande. We have read for many months of Americans murdered in Mexico and of deaths resulting from raids into our territory. A large part of the campaign literature of the summer and autumn concerned itself with the failure of the Administration to protect American

life on the border and in Mexico. All kinds of statements were made and all manner of alleged facts were produced in evidence to prove the statements. Almost nothing was said about the loss of Mexican life on our territory. Such admissions would have been, perhaps, inexcusably bad political judgment, but now that the elections are over, even those who were reluctant to face facts beforehand may find in a frank statement of both sides of the case a better basis for just opinions and just measures.

In the first place, it is no news to any one who goes at the border problem in a non-partisan spirit that the loss of American life due to disorder in Mexico is not confined to these last four years of a Democratic Administration and of the so-called Wilson policy. During Mr. Roosevelt's seven years of the Presidency, sixty Americans were killed by Mexicans in Mexico, and during the four years of Mr. Taft's administration fifty-seven of our fellow-citizens similarly met a violent death on and across the border.

But it is true that the toll has increased during the last four years. From February, 1913, up to November 17th last, 111 American civilians had been killed in Mexico and twenty more had lost their lives on American territory as a result of Mexican border troubles.

During the same period but prior to the raid on Columbus in March, 1916, sixteen American soldiers were killed on American territory either, as proved, actually by Mexicans, or as a result of the prevailing

disorder. The majority of these deaths were either murders or manslaughter and are to be kept distinct from the casualties resulting from General Pershing's punitive expedition in Chihuahua and other invasions of Mexican territory after bandits, such as those by Major Langhorne, in the Big Bend Country, and by Lieutenant Newman, in the Brownsville district.

Call it what you will, the conditions of those expeditions amounted to a state of war, in which our soldiers were actively on the offensive, and although we regret no less the additional sacrifice of life thus involved we may properly consider these deaths incurred in active military campaigning on a different basis from the wholesale and retail murder which preceded them. And the total of these deaths is almost unbelievably small in comparison to the number of Mexicans killed. According to the accurate record of the War Department, only forty-three officers and men had been killed in all our military operations on Mexican soil up to November 25th, and this list includes the eleven colored troopers of the Tenth Cavalry who were surrounded and wiped out by machine-gun fire at Carrizal, the nine members of the Thirteenth Cavalry who were killed in Villa's raid on Columbus, the three troopers of the Fourteenth Cavalry killed at Glenn Springs in May, and the three additional cavalrymen of the same regiment who lost their lives at San Ignacio, Tex., on June 15th. Compare these figures with the number of Mexicans accounted for according to General Pershing's and General Funston's reports.

THE MEXICAN COROLLARY

General Pershing, in his final report on the Columbus raid, after all casualties had been checked up, accounts for ninety Mexicans killed and twenty-three wounded there. His figures on the subsequent operations in Chihuahua from March up to and including November are 251 Mexicans killed and 166 wounded. Some of us will remember that the Columbus raid was dismissed at the time with a total Mexican casualty list of about fifty, and it is doubtful whether either those figures

or the subsequent lists of this expedition have been accurately known heretofore.

One of the most surprising things about these estimates is the discrepancy between the list of killed and the list of wounded, which is in reverse of the proportions usually following even very unequal fighting. A rough average estimate of the proportion of wounded to killed in modern open manœuvre fighting is about four or five to one, and military readers may draw their own conclusions as to what the striking difference between the usual ratio and this up-to-date ratio Mex. indicates. To a layman it would seem to show that a good deal of the fighting had been without quarter, that the marksmanship of our cavalrymen had been extraordinarily deadly. We do know that the average Mexican bandit is either unwilling or afraid to surrender and unafraid to die. Our own list of wounded during the same operations, although still contradictory to the usual military proportion, is much more in keeping with it, since we lost thirty-two soldiers wounded and five missing to the forty-three killed.

These military casualty lists also show a great discrepancy between Mexican and American. But they do not much more than corroborate the general impression as to the relative fighting value of the United States Army and the Mexican banditry. If the relative advantage on our side seems high in New York, it seems low in Texas, where they like to think of the fighting efficiency of Texans as compared to the men across the border in a proportion of at least ten to one. But it is when we come to the death-toll of Mexican civilians that we find the most surprising and startling difference.

The total number of Mexican civilians actually reported as killed on American territory as a result of border troubles in the period 1913 to 1915, inclusive, was 92. That is the number given in Enclosure 12 D in Senate Document No. 324, submitted by Senator Fall in January, 1916. I have many reasons and some proof for believing that these figures are an understatement, to say the least. At all events, since the date of Senator Fall's published record (in proof) additional

Mexicans have added their obituaries to the long border story of reprisals, smuggling and thievery, race hatred, and flat man-killing.

In all this story, politics, local and national, land-grabbing, smuggling, and almost every other kind of human and inhuman motive so distort the facts that it is nearly impossible to determine the truth except in cases where one's own observation can verify or disprove. There is, however, one chapter in this long story which I have some particularly sound ground for believing, and that is the Brownsville district chapter, where responsible eye witnesses are available and good affidavits obtainable. That is a small sector of the borderland, including the counties of Cameron, Starr, and Hidalgo, along the lower Rio Grande. But something like 251 dead Mexicans are lying around in the chaparral there. Some of them are buried, and others have gone to nourish the crows and the buzzards. Some of their names are known and their deaths are matters of record; others are unidentified bodies. Practically all of them were killed without any process of law, a great many expiating thus by a crude justice their own crimes; a great many more died innocently and without redress. Their widows never got even the eight dollars of their own Mexican money which old Admiral Train so generously paid to those slant-eyed widows on the banks of the Yangtze, accidentally bereaved years ago by his shooting party

CHAPTER AND VERSE

Some of the verses in this wretched chapter, taken out of local records which can be proved by affidavits, run about as follows: On the 29th of July Deputy Sheriffs Frank Carr and Daniel Hinojosa left San-Benito at 10 P. M. with Adolfo Muñoz, a suspected prisoner, in an automobile bound for Brownsville. On the way they were held up by another automobile containing masked men who took Muñoz away from his custodians, stood him up by the side of the road, shot him dead, and left him hanging to the limb of a convenient, near-by tree.

Another verse: In August, 1915, old

man Austin and his son Charles, Americans, were taken from their house in Sebastian by some bad men in that neighborhood and shot. As soon as the news of the killing got abroad posses were formed and a big man-hunt begun, during the course of which about fifteen Mexicans were killed. This was summary retribution, the kind which Texans of that region rightly or wrongly believe to be the only way of stamping out Mexican disorder and crime on the border.

But only a few days later, August 8th, a crowd of about fifty Mexicans, headed by a bandit called Captain Miguel, attacked Las Norias ranch house about sixty-seven miles north of Brownsville. In the ensuing fight two civilians and three United States soldiers were wounded. Another man-hunt promptly began under the leadership of Texas rangers and that very numerous class of private citizens called deputy sheriffs. This was a big round-up, carried on with occasional discrimination in the neighborhood of Lyford, Mercedes, and Raymondville, and the bag amounted to about fifty dead Mexicans in all.

On August 18th reports came into Brownsville that there were eight more dead Mexicans lying in a single pile just north of Harlingen—headquarters during last summer of one of the National Brigades in this district—and that a regular cleaning-out of bad men was under way. Results of this cleaning-up process in the western part of Cameron and Hidalgo counties were marked for many days and weeks by clumps of vultures stirred up from the mesquite by passers-by.

Back and forth the reprisals go. Again on September 2d a cloud of bandits suddenly coming out of nowhere jumped on the Los Fesos track, only twelve miles out of Brownsville, along the railroad. They shot down two Americans, Smith and Donaldson, and left them to rot in the bed of an old dry ravine. Most of the able-bodied citizens of San Benito when they heard of this murder turned out and pursued the Mexicans until they had scattered. Immediately another general man-hunt began and the rangers and the deputy sheriffs killed a number of suspects, amounting to fourteen or more. During the hunting

they shot into a farmhouse, killing Martina Rivas, daughter of Senovio Rivas, who was asleep in bed. Two other younger children of Rivas were also wounded.

Into this wholesale homicide comes brightly the episode of James B. McAllen, who was seated at dinner alone in his house with his Mexican woman-servant waiting upon him. They heard voices outside and the Mexican woman went to the door, where she was met by a man on horseback who asked to see McAllen. Closing the door, she came back to James B., naively stating that she did not like the looks of the caller and that there were a number of others like him on horseback outside. That was enough information to act on. McAllen drank the rest of his coffee, poked his repeater through the window, and without a word shot down the first invader and the two others nearest him, the others all returning a heavy fire. The net Mexican casualties were three certainly dead and two reported wounded. There were no American casualties, as Jim McAllen did all the fighting on the American side.

About this same time, September 2d-13th, deputy sheriffs took a clerk from Cawthorne's store at Donna, a waiter from the hotel at Pharr, both towns on the branch line from Harlingen to Mission, and a grocer from the latter town and carried them off into the chaparral, where they were afterward found shot full of holes. These men were all Mexicans suspected of complicity in the famous Plan of San Diego, a much over-dreaded conspiracy which I fully explained in the *WORLD'S WORK* for May.

Late one night four automobiles with their mufflers cut out passed through Ebenezer, on the railroad between Donna and San Juan. Shortly afterward those who were awake in Donna heard the sound of shooting in the still Texas night, and by and by the automobiles came back through town. Next morning eleven dead Mexicans were found in a cornfield, and the aforesaid citizens of Donna who resided to the leeward had to bury them.

At the end of September rangers working in Hidalgo County reported that they were disposing of the suspects and bad

men in their district very rapidly. It is impossible to secure accurate information as to how successful their efforts proved. One man told me the number of Mexicans killed exceeded seventy-five, and my informant was a well-known citizen of Brownsville who has access to the most reliable evidence, and has made a record of the names of many of those supposed bad men of Hidalgo.

So the story goes. I have omitted the most sordid or disgusting chapters. It is a part of the border epic we do not hear. Our newspapers do not print it. A political campaign which combed the border with a fine-toothed comb passed over it. We do not like to think about it, for at first sight it seems unpatriotic and disloyal to admit that we are ourselves partly to blame for the disorder which it has become customary to saddle entirely upon the chaos that we call Mexico.

OUR RESPONSIBILITY

For the clear truth stands out that we ourselves largely, almost 50 per cent., are responsible for that international nuisance which we call "the border." The biggest state in the Union is also one of the most independent and one of the most loosely governed. For many years along the Rio Grande boundary of the state of Texas cow thieves and "bad men" have been permitted to operate with almost unrestrained license. Smuggling has always been an apparently inevitable adjunct of every international boundary, and it is no joke, either for a military or customs patrol, keeping track of the 1,300 miles of fordable river which separates Mexico from the Texas kind of United States. But smuggling there has run riot, helping to breed on both sides of the river the lawless conditions which we are now trying to stamp out, most of us erroneously under the impression that the trouble is entirely of Mexican origin.

Here is another phase of our responsibility. Ever since May, 1913, a constantly increasing tide of impoverished Mexican immigration has been drifting across the line into Texas, New Mexico, and Arizona. It is merely repeating a threadbare statement to say that a large majority of the

population in the southern counties of all these states is Mexican. There has never been any thoroughgoing attempt to deal with this often undesirable immigration or to assimilate and find employment for an alien population. Ninety per cent. of the Mexicans living on the Texas side of the border have been short of food for two years, and more of them than you would believe have actually been for months on the edge of starvation. Even at that they were better off than in their abandoned homes in Chihuahua, Sonora, or Tamaulipas.

Naturally the continuance of these conditions does not lead to good order in an immigrant population speaking a language different from that of the country of their desperate adoption, and under the initial disadvantage of an active race prejudice. In the lower river valley between Sam Fordyce and the Gulf a great deal of Mexican labor was employed in 1913 and 1914 on drainage and irrigation canals, by means of which this sector of the borderland has been made more fertile than any of the up-stream desert areas. At the end of 1913 most of the canal companies discharged their Mexican laborers and an increase in disorder was immediately noticeable as this increment of unemployed was set loose in the community. Such natural sequence of cause and effect is not peculiar to the border; it works just the same way in Pennsylvania, in Michigan, and in New York City.

And there is still another reason why our lack of properly discharged responsibility has contributed to the continuing disorder. The mere mention of this reason is very unpopular anywhere from Brownsville to San Diego. But it is, nevertheless, to any unprejudiced observer, a real cause of trouble, although it exists as a remedy. This is the unwarranted disregard for constitutional law or even ordinary human rights by Texas rangers, deputy sheriffs, and other official or self-constituted peace officers. The system under which they operate flourishes simply because there has never been on the part of the State or National Government any thoroughgoing attempt to substitute a better system. There are still good

Texas rangers of the old type; but a good many of the others are plain, licensed gunmen, man-killers.

A good example of this statement may be found in the case of a deputy sheriff of the San Benito district, who publicly announced, after a train wreck in November, 1915, in which three Americans were killed by the bandit wreckers, that he was going to "get" nineteen Mexicans for every American touched on that train. He, with some of his fellow deputies, did "get" eleven unarmed Mexicans working in the fields, nine of whom turned out to have had no possible connection with the train robbery.

In Mission, Tex., I met a fine six-foot young Texan, joint owner of one of the largest ranch properties in that locality, and generally and rightly respected by all his neighbors.

He carried a big Colt gun on his hip and enough ammunition to last a week. There is a big chance of injustice in going down into a strange community and judging men living there who face, every day, without much perspective, perhaps, conditions as they see them. But this Texan impressed me as an unstrung, excitable boy, rather obviously relishing the heroic rôle of a man who had accounted for five Mexicans. One of these killings was creditable enough, if you will, since it was open battle on the streets of Mission, with both sides armed and the best shot winning. But one of the other homicides, as told by one of General Funston's aides who was, at the time of the shooting, stationed at Mission, impressed me much less favorably. The rancher stepped into Captain X's tent one night, borrowed from him enough .38's to fill the clip of his automatic, walked outside, and shot down his unarmed Mexican overseer. It afterward turned out that the dead overseer was innocent of the offense suspected.

THE CASE OF OLD MAN WHITE

All the border towns are full of stories like this. Their mere iteration accomplishes nothing more. What we must try to realize is that before the militia concentration the situation, the whole atmosphere of the border, was nervous and panicky

as were the reconstruction days in the South—that is to say, the sincere, the emotional state of mind was like that. To feel the atmosphere properly, put yourself in the moving-picture theatre at Mission one day last June when old man White came in. A few days previously two bad men had laid for old man White in the hallway of his office and shot the air full of holes all around him. He knocked one down with a lightning left fist, whipped out his gun, and killed both of them before either one was able to register on him. White had simplified the action of his Colt, as some of the rangers do, by removing the trigger. All he had to do was to tweak up the hammer with his thumb, cocking and firing being one motion without a hard trigger pull.

It was dark in the crowded movies when old man White came in, and as he sat down somewhat ponderously the hammer of the gun on his hip caught on the back of the seat and let go two shots in quick succession. When the smoke cleared away there was old man White all alone in the midst of a howling desolation, peacefully regarding a picture which had ceased to move.

By contrast, there is nothing panicky about the land-grabbing, feudal, "to hell with Mexico and the Mexicans" part of the border atmosphere, which is as cold, calm, and deliberate as stock manipulation or the last Republican National Convention at Chicago.

DEALING WITH BANDITS

The cure of the state of mind which is, and has long been, nervous and panicky is to take the disciplinary function out of the hands of private citizens and completely out of the hands of politicians—if such an ideal can be realized in the United States. Deal with the bandit-making material as with any other kind of unemployment or vagrant criminality. Go at the whole job in a preventive fashion rather than in the bitterness of reprisals. In a previous article I described how General Ricaut, Carranza's nephew, in command of the Mexican garrison at Matamoras, had already put into operation such a system with results which already in August were admitted by General Parker and his

staff officers at Brownsville to be excellent. Ricaut was running a kind of bandit employment agency in which he made a business of looking up all the incipient bandits or other unemployed bad men in his district and shipping them out of the country several hundred miles away south billeted on jobs in munition factories or cotton plantations or whatever other kind of regular industry and agriculture the defacto Government depends upon.

Such preventive measures would be effective in removing the material of probable disorder, but we must of course have some more immediately effective means of dealing promptly with actual disorder. There is just one efficient and economical way of accomplishing this. Begin by sending the National Guard home to their states. They have already accomplished a threefold result by their concentration on the border: in bluffing Mexico, in greatly increasing their own physical and military value individually, and in conclusively demonstrating to themselves, to their immediate friends, and to that portion of the general public which has taken enough interest to keep track of their evolutions, the complete uselessness for national defense of the National Guard system.

Secondly—and all this is on the presumption that we do not intend, mean, or want either war or intervention—pull Pershing up out of Chihuahua, and redistribute the United States Army as an army and not as a combination of vice squad, construction gang, and Sunday School picnic.

These movements and readjustments must be made slowly, qualified by the course of events in Mexico. Before they are completed, and under cover of them, a body of constabulary should be organized, not more than five or six thousand strong, highly paid, recruited from the best horsemen obtainable, whether ex-cavalrymen, cow punchers, or mounted police, perfectly mounted, officered, and commanded by United States Army officers specially chosen for this service, who shall be responsible through the War Department to Congress and the Chief Executive.

After three months of words and fine distinctions, of an ill-advised consideration of matters economic, financial, and politi-

cal, affecting the whole destiny of the Mexican Republic in its relations to the United States and other foreign countries, the joint Mexican-American Commission finally, on November 24th, signed a protocol providing for joint regulation of the border, and Señor Pani departed with it for Queretaro in the hope there to obtain ratification from General Carranza. It had become clear to the American members of the Commission—what should have been evident before their sessions began—that they had been exhausting their own patience, encouraging the time-wasting *mañana* tactics of their colleagues, and irritating public opinion in both countries by the mistaken judgment of not dealing with border conditions as a separate problem susceptible of comparatively immediate solution. Weeks were consumed in a superficial consideration of matters, impossible of prompt agreement, affecting the whole reconstruction of Mexico and its establishment again among the great family of nations.

During the greater part of all this conferring and living together in big hotels it was election time in both countries. Carranza was getting his new Constitutional Congress nominally elected but actually appointed, while in this country Republicans and Democrats were making a campaign issue out of "Mexico." Under such conditions we could hardly have expected the Commission to accomplish anything definite even had all its members been sincerely actuated with the spirit of accomplishment.

MEXICAN MARIONETTES

The Mexican members were merely marionettes with Don Venustiano pulling their actuating wires all the way from Mexico City, while he enunciated decrees, necessarily affecting the deliberations of the conference, which he expected his forthcoming Constitutional Convention to ratify. All the time Messrs. Cabrera, Bonillas, and Pani were holding forth daily in the highly rarefied air of sovereign rights, there was the very travesty of constitutionality going on in their native land, where the "First Chief" and his coterie of relatives and friends dominated and

defined the whole show in the name of that same constitutionality.

The childish insincerity of the Mexican Commissioners, who, we must believe, were faithfully representing the ideas of the de facto Government, became exasperating and discouraging to their American colleagues and to those who were able to follow the sessions of the congress. While in the earlier meetings at New London the Mexican delegates were trying to bluff the conference with the appearance of financial complacency the de facto Government was forcing its depreciated fiat money on its own tradesmen at the point of the bayonet, and the two biggest banks in Mexico City suspended. For a long time, indeed, so far from paying interest on their deposits, these banks had actually been exacting a healthy commission for harboring the money of their depositors *at the owners' risk!* While Señor Cabrera at New London and Atlantic City was getting passionately patriotic two or three times a week over the presence of General Pershing's little army in Chihuahua, Secretary Lane, chairman of the American delegates, was continually getting letters from Señor Cabrera's fellow-countrymen in the zone of peace and prosperity created by this "violation of sovereignty" urging him not to withdraw their only source of protection, food, and money.

It was almost pathetic to see the Honorable Messrs. Lane, Gray, and Mott, charged both officially and ingenuously with good-will, going up daily against the rhetoric of Señor Cabrera. Our delegates were there for just one Christian purpose: How to help de facto Mexico out of a bad hole and help put border Mexico in order. To this single end they daily went out of their way, in the matter of their personal relations with their colleagues and in the character of their official representations, to establish an unquestionable good faith and to suggest measures of practical helpfulness in the quickest and most acceptable way. As Secretary Lane said after he had set his signature to the two drafts of the protocol, one for Señor Pani to carry down to Queretaro and the other in his own pocket to the White House:

"We are trying to make a Mexico that

we can live with. . . . We will help her to get into good shape if she can only understand that we mean to be her friend. She cannot be sick and strong at the same time . . . Mexico will either do right without our help or with it. This is her choice. The purpose for which this Commission was formed was to exert one last effort toward making Mexico a possible neighbor under the Constitutionalist Government."

But until the last few days of the conference all that Mr. Lane and his two colleagues met in the way of reciprocity was a hurricane of words. Perhaps it was, and is, an inevitable matter of race, of tradition, and habit of mind. Mexico simply wouldn't believe these patient gentlemen. At the start, the Mexican delegates may have had some justification for their attitude, for it is true that we have never implicitly trusted Carranza and his *de facto* attempts to govern. We have not so much mistrusted his motives and ends as we have thought we divined his obstinate weakness and therefore must discount many of his professions.

All through the conference the Mexican delegates were providing an impressive spectacle of intellectual peonage. They could not, or would not, see that theirs was a form of peonage as much opposed to the welfare of the Mexican nation as the agricultural peonage which they say they are "revoluting" about. They were intoxicated with words and because of so much dialectics and ritual they seemed—it is hard to say whether deliberately or unconsciously—to lose all sight of the real objects of the conference. "Sovereignty"—for example—would call forth hours and pages of French Revolution, Mirabeau, and other bibliography, while the three clean-shaven, elderly American delegates across the conference table, coached at whatever cost to be considerate and *simpático*, patiently weathered the storm with glazing eyes and strangled yawns.

Meantime Pancho Villa, with a Mauser in one hand and an American dollar in the other, was riding up and down Chihuahua adding his own picturesque footnotes to "sovereignty." Election came and went and this country was assured of the con-

tinuance of a generous forbearance toward Mexico. The conference dragged on. Mr. Bonillas, who has lived most of his life in Nogales, Ariz., and is a graduate of the Boston Technology, finally declined to run true to form and came to blows with Señor Cabrera, refusing thereafter to sit with him at the family dinner parties of all the delegates and their families which wound up each day's session.

Finally, Mr. Lane came to Washington and after a conference at the White House with the President, Mr. Lansing, and the Secretary of War, took back with him to Atlantic City a final form of agreement, the details of which the delegates had been splitting hairs over for several weeks. It was a question of take it or leave it. To the extent of signing their names to it, the Mexican delegates took it. The withdrawal of General Pershing's force within forty days from the date of signing, provided border conditions remained in statu quo, was promised. Señor Cabrera had for weeks blocked the entire willingness of the American Government to take this action by demanding, as a condition precedent, the acknowledgment by the American Government that General Pershing's expedition had been from the start an unsanctioned violation of Mexican sovereignty. In a separate, initialed memorandum, the Mexican delegates agreed—and remember, their agreement was purely an academic matter until the First Chief ratified it—that United States forces protecting the border might follow future bandit or super-bandit raids on "hot trails" across the line into Mexico. No system of border regulation was agreed upon, that being left as a matter of separate arrangement to the military forces of each country.

With good luck and good nature and a little good faith on both sides, this might possibly prove to have been the first step toward a clean borderland and the resumption of diplomatic and trade relations between the two nations. If so, all those dead men down on the border shall not have told their tales in vain. But thus far their lives have been as cheap as the lives of Chinamen used to be in South China before Admiral Train raised the cost of killing them.

THE FEET OF THE FIGHTING MEN

HOW THE ARMY INSURES HIKING ABILITY—THE REAL BASIS OF INFANTRY MOBILITY—A NEW SYSTEM OF MAKING THE SHOE FIT THE MAN AND KEEPING SHOD MEN FIT

BY

JOHN S. GREGORY

I HAD a boot-gall," says Terence Mulvaney, in Kipling's story, "but I was all for keepin' up with the regiment and suchlike foolishness. So I finished up wid a hole in me heel that you cud ha' dhruv a tent peg into. Faith, how often have I preached that to recruits since, for a warnin' to thim to look after their feet!

"Our doctor, he sez to me in the middle of the Tangi Pass, he sez, 'How often have I tould you that a marchin' man is no stronger than his feet—his feet—his feet,' he sez. 'Now to hospital ye go,' he sez, 'for three weeks, an expense to your Quane an' a nuisance to your country. Next time,' sez he, 'perhaps you'll put some of the whiskey you pour down your throat, an' some of the tallow you put into your hair, into your socks,' sez he. Faith, he was a just man."

The old saw about an army moving on its belly is all wrong. An army, horse, foot, and guns, moves on its feet. It is a matter of tires and iron-shod hoofs and

socks and shoes. But we will narrow the discussion here to the feet of the fighting men, the infantry, which forms the bulk of all armies.

If the army's feet are not sound it doesn't move far and it can't move fast. And that is why, in the medical corps and in the quartermaster's division, you will find a disproportionate amount of official solicitude about feet as compared to legs or hands or even heads. This concern is the same in all armies; and we are profiting by the trials and the mistakes taught us by the millions of weary feet which have followed the roads of Europe into battle. An infantryman will advance a day or retreat two days without food sometimes but he won't advance on sore feet. Motor lorries will be loaded up with him going to the front, and ambulances lugging him away to the rear.

In the early weeks of the militia concentration on the Texan border practice marches developed physical unfitness in nearly every command. On short hikes of no more than six or ten miles a very large percentage of men fell out, to be gathered up by motor trucks and brought into camp or harvested by ambulances back to hospitals. These men fell out for a variety of reasons, but a great many of them refused to march any further on account of sore feet. To begin with, marching and walking—as the average civilian, not a policeman or a postman, understands walking about his daily vocation—are two very different things. An infantryman on his feet carries about sixty pounds of dead weight: forty-five pounds or so of pack, eight pounds or so of rifle, and the rest in ammunition or separate equipment. He cannot choose his own gait, and he has to negotiate all kinds of ground, winter roads corrugated with frozen



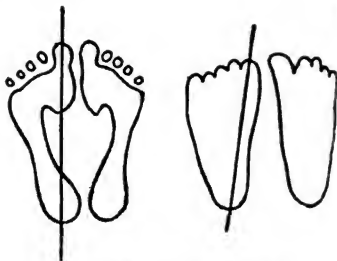
THE RIGHT AND WRONG OF FOOTGEAR

The two lasts at the left are improper, as they cramp and distort the foot; the last on the right is correct in shape

ruts, slippery trails of mud and water, rocks, hot sand. And more than half the time a change of shoes is for him a luxury; he is very apt to keep the same pair on night and day, wet or dry. If his shoes are not right, or if his feet are not sound, he cannot last a week with a moving command; and it is entirely possible that he will even have trouble in a trench.

It was easy to account for a great many militia sore feet early in the summer. The machinery of the War Department ground slowly, and many regiments turned up in all kinds of quaint footwear made to be sat in or briefly stood in, but never to be hiked in over the rough gumbo of Texas. There were patent leathers, boots button, kid-top boots, low shoes with pointed toes and wide verandahs running round them, sneakers, Congress gaiters, and "college shoes for college men," all bravely kicking up the dust or squeegging through the mud, hay-foot-straw-foot, along the border. No wonder Illinois fell out by their 20 per cent., or Virginia lay down in companies. No wonder New York lost ninety men by the roadside in six miles. Some of it was sun, some of it was faint heart; most of it was feet.

In those early weeks the trouble was due to no serious attempt at scientific shoeing at all. But as late as November a brigade formed of regiments from the District of Columbia, Mississippi, and West Virginia, after nearly five months spent in active duty at their state and border camps, made a three-days' hike of only thirty-six miles from Fort Houston to Landa Park, Tex.



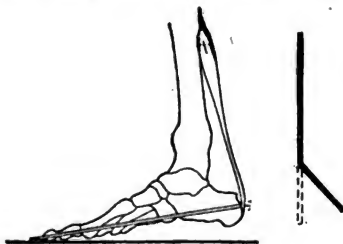
UNTRAMMELED FOOTPRINTS

The footprints of an Arab who never wore shoes (left) and the print of a baby's foot (right)

"Scores of the militiamen," the report goes, "reached here in ambulances as a result of foot trouble." Every one of these militiamen in the ambulances was wearing a pair of regulation shoes issued according to the old mechanical requisition on the Quartermaster's Stores. The difficulty in this case was due to imperfect inspection and inaccurate requisition, a combination of bad system and misuse of good material.

In those days arose upon the border a prophet, an apostle to the weary and heavy laden. His name was Major William W. Reno, Medical Corps, U. S. A., and he was a voice crying in the Texan wilderness, saying, "They shall run and not be weary; they shall walk and not faint." Major Reno makes a profession of keeping the United States Army on its feet. With him it is more than a profession; it is almost a religion. Out of the experience of many years devoted to the study of pedal extremities he devised a system of inspection with a consequent form of requisition on the Quartermaster's supply of shoes and socks. Army orders were issued which established that system for the regulars and for the organized militia in service. Under this established system, during the last six months, Major Reno has inspected 250,000 feet—not pairs of feet—and prescribed for them with a refinement which goes to the sixteenth of an inch.

Major Reno will tell you that bare-foot and sandal-wearing races are and always have been better marchers than the shoe-wearing peoples. The Plains In-



A "HALLUX VALGUS"

A foot with "hallux valgus" is a lever with a lateral bend at its fulcrum end

ians of Arizona and of Mexico will go all day, and day after day, over hot sands and rocks without any punishment. The Indians of Mexico are longer hikers on foot than they are mounted. Military history is full of instances which support this very natural fact. One of the penalties of civilization is decreased marching and walking power. We sit more and stand less than our ancestors did, and almost any kind of a shoe short of a moccasin limits the freedom of our feet and in time necessarily causes atrophy of certain foot muscles. The nor-

tations has come to stay. Its great disadvantage in walking or in marching comes not so much from the fact that it is a shoe as that, from childhood to old age, the average person never wears properly fitting shoes. Consequently, by the time a man is of military age his feet have become so deformed and twisted away from natural lines of supple usefulness that great marching capacity is well-nigh a physical impossibility. The wonder is not that marching infantrymen fall out by scores but that with our imperfect footgear and

ORGANIZATION <u>16th Penn. Inf.</u>		INSPECTION OF FEET AND SHOES.		DATE <u>11/25/16</u>	
INSPECTORS.					
Major William W. Reno, Medical Corps, U.S.A.			1st Lieut. Arthur S. Jones, M.R.C., USA		
2nd Lieut. Wm. H. Hoyt, M.C.			1st. Ill F.M.C.		
C	Corns	<u>250</u>	B	Bunions	<u>613</u>
Ca.	Callusities	<u>1059</u>	Lx.	Thrustoses	
TOC	Toes jammed or crowded	<u>636</u>	Fl.	Flexibility	
Hv.	Halter valgus	<u>1791</u>	Ar.	Arches	
TOC	Toes over-riding	<u>92</u>	Tr.	Protraction	
HE	Hammer toes	<u>16</u>	Iv.	Inversion	
IN	Improving nails	<u>262</u>	CP	Cool Feet	<u>290</u>
REMARKS:					
Men wearing shoes indicated by foot measurement (length only): <u>105</u>					
Men wearing shoes two-half too small: <u>296</u>					
Men wearing shoes one or more sizes too small: <u>296</u>					
Men wearing shoes too large: <u>131</u>					
Number of men inspected: <u>1087</u>					
Corns and callusities are the direct result of improperly fitting shoes. Perfectly fit-					

THE FEET OF THE ARMY

Two hundred and ninety good feet out of 1,087 inspected. Record of foot inspection of the 16th Pennsylvania Infantry

mal foot—the foot of a young child, of an Arab, the foot which earns the living of a bare-legged dancer—like Maude Allen or Ruth St. Denis—is very flexible. Great freedom of action is needed in walking, running, jumping, dancing, marching. The large joints of the foot must be free to act. The grasp of the toes against the ground and the backward push of the great toe are of value in every single running or dancing or marching step. The longitudinal and transverse arches must have room to contract or expand in balancing the shifting weight of the body. The 100-per-cent. foot ought to be almost as flexible and sensitive as a hand, instead of the inflexible thing that generations of sitting and bowing to the dictates of fashion have made it.

But there is no use rebelling against the shoe. The shoe in its various manifes-

tations has come to stay. Its great disadvantage in walking or in marching comes not so much from the fact that it is a shoe as that, from childhood to old age, the average person never wears properly fitting shoes. Consequently, by the time a man is of military age his feet have become so deformed and twisted away from natural lines of supple usefulness that great marching capacity is well-nigh a physical impossibility. The wonder is not that marching infantrymen fall out by scores but that with our imperfect footgear and

haphazard fitting of man and shoe we have such good records. In 1911 a whole division in heavy marching order covered twenty-eight miles in a little less than twelve hours at San Antonio, and several times during the manœuvres of last October and November on the Mexican border this record was exceeded by smaller bodies of troops. Those marches were all made in the regulation United States Army shoe. In normal times the War Department issues shoes from its main supply depots at the rate of 1,000 pairs a day. It carries more than a half million pairs in stock. In the early weeks of the concentration the difficulty in filling requisitions was not so much a matter of shortage in stock as of the physical impossibility of issuing and transporting the material fast enough from



CHARTING THE ARMY'S FEET

A metal stylus is used in making the outlines of the soldiers' feet, the outlines thus being automatically recorded in duplicate

one or two main depots to keep pace with the enormously increased demand.

The present United States Army shoe is the result of all the European contracts which have been filled in this country. It corresponds most closely to the French and Belgian military shoe. It is a laced shoe of partial Blucher pattern, coming up just over the ankle bone, by contrast to the unlaced, wide topped boot, worn by the German infantry regiments and familiar to every one who has at all carefully observed the photographs of the Great War. Until very recently our army shoe was made of russet leather, smooth side out. That type is still regulation for garrison wear. But the Mexican operations have afforded just the test which our commissary

department needed to back up the European war orders. They proved the old shoe, although correct in last, much too light for heavy service. Accordingly in July the War Department began turning out shoes which combine the remote lessons of the European War with the immediate needs of the Mexican service. The leather was used smooth side in with no lining, the rough, undressed leather outside to be soaked in oil before use. The heavy soles were kept supple but shod with hobnails and

steel heel rims like a horse-shoe. Where a photograph taken somewhere in France shows a French soldier fallen forward on his face as though in prayer—the way an advancing infantryman will always fall when shot dead—you will see an exact



ONE OF 250,000 FEET INSPECTED

In every case a record is taken of the shoe worn and a prescription for the proper size of shoe and stocking to be worn. Every soldier must draw his shoes from the Quartermaster according to this accurate data

stration of this shoe
hetically turned up
the sky.

These army shoes
carried in ninety
ferent sizes, ranging
m an almost Chi-
se $4\frac{1}{2}$ A to a $14\frac{1}{2}$ EE,
which sounds like a
oderate form of ele-
antiasis. In July
ders were placed
ith New England
anufacturers for
out 250,000 pairs of
them, and now they
re being issued at the
te of 1,000 pairs a
ay. It ought not to
e hard to fit any nor-
mal bipped out of such
stock. But left to
emselves the men
ill not order their

ght sizes. Neither will most of the rest
us, men or women, order the right size
r the right kind of a shoe.

Ninety per cent. of people in civil life
ear shoes which do not fit them. Listen
o some of the letters which Major Reno



THE FEET OF THE YOUNG MEN

Soldiers of the Pennsylvania Division lining up for foot and shoe inspection at their camp in El Paso, Tex.

received from shoe manufacturers during
his foot crusade:

"The man who will buy purely anat-
omical shoes," writes one manufacturer,
"is the man who has arrived at years of
maturity and discretion, but he is not the

fellow who creates vol-
ume in shoe manufac-
ture. The fellow we
have to cater for to-
day is the young man
who buys a pair of
shoes because they are
the latest thing, who
will wear them a couple
of months until they
are a bit shabby, and
then buy another pair.
The dictates of fashion
in this respect run in
waves, and we find
that in going after
the faddish stuff we
have to change the
type of our lasts about
every six months
and the patterns to
match."

Another manu-
facturer writes: "The



RECORDING FOOT-PRINTS

Under the direction of army surgeons these soldiers tabulate foot conditions
indicated on the charts, which are made at the rate of one every twelve sec-
onds by the outliners



FOOT INSPECTION

With the new system now in use the foot, shoe, and stocking condition of every soldier is accurately recorded for prescription and record

difficulty in building shoes along anatomical lines is not usually a difficulty of manufacture, and is not due to manufacturers not knowing what constitutes at least some of the principles of anatomical footwear. But it has been amply proven in our case that the public does not want, at least in any great number, shoes so made. To be successful in the shoe-manufacturing game you have got to give the public what they want and not what you think they ought to have."

Now the Army is really not far removed from the public, and the militia is simply a part of the public temporarily in uniform and subject to the same kind of vanity which aroused the British surgeon's ire against Terence Mulvaney. The big contribution of Major Reno's new system is that it does not leave this basic ingredient in military efficiency to the vanity or the carelessness of an enlisted man; it is now a matter of exact prescription carried out by formal order.

Every enlisted man in the Regular Army, which now includes, so far as these regulations are concerned, the organized

militia in the service of the United States has a clothing allowance of \$48 for the first year of his term, with a subsequent allowance of \$24 for each succeeding year. Out of this allowance he can easily, and must, clothe himself. A careful soldier can save money out of this sum.

In this allowance schedule the army shoe was listed last year at \$2.88 a pair which represented the average cost price of all War Department shoe contracts up to 1915. This year, due to the increased expense of leather and manufacture, the army shoe costs a dollar more a pair. Some men wear out two pairs every year; other men wear out six pairs. Major Reno's new system makes it impossible for the enlisted man to draw anything but his scientifically correct size of shoe and sock—for a wrinkle in a sock or size too small will defeat the purpose of the most accurate shoe. Every man on the border now files his inspection blank with his requisition for shoes as though he were going to a drug store with a doctor's prescription.

It is both impressive and amusing to



FOOT PREPAREDNESS

Proper shoes are the basis of long marching. The Army issues shoes at the rate of one thousand pairs a day in normal times in ninety different sizes

watch Major Reno's system at work. The men are inspected, a battalion or a regiment at a time. On the day for the inspection they all line up in single file, standing with freshly washed feet, socks, and the head of the column feeding into the field hospital tent where the examinations are made. There, five at a time, they step barefooted on to as many wooden stands, placing their feet over big black patterns, on which the examiners quickly trace the outlines with their metal styluses, and then by a quick but thorough examination record the condition of each foot examined. At an adjoining table a recorder keeps tab of the number of the tracing and adds to it the specifications called out by the examiner.

The whole thing runs like a Ford factory: the long khaki line disappears patiently and steadily into one end of the tent, jumps for a few moments in five figures against the skyline, and then down again, shoes in hand, scattering back into camp. The styluses go zipping about an endless succession of feet, insistent voices proclaim scientific names of foot

troubles, felt but undefined by their owners, and at their tables the twenty-one recorders scribble merrily away in the sunshine. And on an average of every minute five soldiers leave their footprints on the sands of time.

To a layman, the records of these inspections are astonishing. For example, let us take the specific case of the Sixteenth Pennsylvania Infantry. Out of 1,087 men inspected, only 290 sound feet were found. Four hundred and seventy-six men were wearing shoes from one to two complete sizes too small. The Sixteenth Pennsylvania sported 750 corns, 762 ingrowing nails, 613 bunions, to say nothing of such esoteric maladies as "exostoses," "pronation," and "hallux valgus," of which latter misery there were 500 well developed cases. One wonders how the Sixteenth Pennsylvania got over the ground at all.

By contrast to this painful condition, the Thirty-fourth Regular Infantry seems much more able to dispense with motor truck transportation. Out of 685 men inspected in this regiment there were 546 sound feet, although 329 men were wearing



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THE SHOE, NEGLIGIBLE ELEMENT IN PARADES—

For parades or drills on well paved streets where the wear and tear on the footgear is slight almost any well fitting shoe will do for the soldier, but—

shoes altogether too small for them. The Thirty-fourth was very modest with its bunions, only qualifying 42, with 94 ingrowing nails, and 369 corns.

Merely listening to these figures hurts. It fairly makes us ache to think of the Sixteenth Pennsylvania—and this regiment is only a fair average of those inspected, not an extreme case—it makes us ache to think of those 750 corns, 762 ingrowing nails, 613 bunions, and 590 "hallux valguses," worrying their weary way over the hot alkali sands of Texas, with sixty pounds of dead weight per man to emphasize them. But the feet of the Army are of mild concern, according to Dr. Reno, compared to the unconverted feet of benighted civilians. Out of 2,413 civilian adults whom he examined, 2,017 were wearing shoes that did not fit their feet.

As a result of the army inspection, two things happen immediately. Every man was put in the way of getting that one of the ninety available different sizes of shoes which exactly fitted his own particular feet, not as he would have them appear but as the inspection showed them actually to be.

Curiously enough, the great majority of the sizes specified after inspection are 7 or 7½. Most army men, especially those who have been several years in the service, have short, wide, stubby feet. They stand on them. The biggest draft of all, according to the Quartermaster's shoe tariff schedule, is 7 E. Out of 10,000 pairs issued, there were 1,695 sevens and 1,503 eights as against only 741 nines. Only 77 men wore No. 11's.

The feet of the fighting men are fast being properly shod. But more than that, every man with imperfect feet is set to work to cure them by regularly established foot exercises. That is the other immediate result of the army foot inspection. The men with bad feet are set aside in separate squads and every day put through a series of prescribed exercises just as the whole command goes through setting-up drill every morning. These additional exercises are, in fact, part of the setting-up manual, and they have proved so helpful in the service that they have already been introduced into Yale and Smith colleges. Indeed, they have



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—BUT ALL-IMPORTANT ON THE MARCH

—on a long, hot, dusty hike through sand and over rough country the soldier needs the best footwear obtainable and best suited to his own particular requirements

proved so beneficial that it may not be amiss to describe some of them for the benefit of suffering men and women who would appreciate sound and supple feet for other purposes than fighting.

Well, then, if you should walk through one of the camps at El Paso, Brownsville, Eagle Pass, or Nogales, you might witness the curious sight of a row of barefoot soldiers standing erect in the early light and, without laughter, all wiggling their toes. Sometimes they stand on planking retrieved from the camp warehouse and destined eventually for shower baths or latrines. At other times they dig a little trench or holes in the ground for the exigencies of Exercises I and II.

In Exercise I every man stands erect, with only his toes projecting beyond the edge of the board or the little depression he has dug in the ground. In this position he repeatedly—thirty times, generally—bends or attempts to bend his toes downward in a gripping movement reminiscent of his prehistoric ancestors. For Exercise II he moves forward a little until half of his foot projects over the edge of

plank or depression and goes through the same movement an equal number of times.

When it comes to Exercise III each man moves back until his entire foot rests on a flat surface, when, without raising the body of the foot, the toes are curled back thirty times. In Exercise IV, in this same position, the direction is to separate all the toes thirty times, the way babies do and the way very few of the rest of us can do. In fact, the average facial expression of the enlisted man when Exercise IV is announced says eloquently, "It can't be done." Exercises V and VI are nearly the same. The toes are turned slightly in and the heels out, the weight of the body thrown on the outer edge of the foot, while the toes are bent downward and curled under the foot, or with the weight of the body on the heels the anterior portion of the entire foot is lifted as high as possible from the ground.

Properly fitting shoes and these exercises form the text of Major Reno's gospel. Possibly it may spread in time through the Army even unto the millions of vain and uncomfortable Philistines.

JAPAN'S ACTS IN CHINA

MAINSPRINGS OF CHINESE RESENTMENT AND
AMERICAN ANXIETY—WHY MUCH AMERI-
CAN CRITICISM FAILS TO INFLUENCE
JAPANESE—INDEFINITE AMERI-
CAN DIPLOMACY—WHAT OP-
PORTUNISM HAS COST
JAPAN—THE WAY TO
AVERT A CRISIS

BY

JEREMIAH W. JENKS



EVENTS, not intentions, define and decide international policies. International suspicions, rivalries, jealousies, have their roots, usually, in specific acts. In China, in America, in Japan, one hears constant references to the "failure of the Japanese policy in China." The actual nature and the extent of this failure be-

come measurably apparent when one reviews the acts of Japan in China as these acts reveal themselves when they are viewed through Chinese eyes.

In the days of "The Three Kingdoms" in China, two men were rivals for the office of prime minister at the court of a young monarch who was earnestly eager to prove himself a model king. Unable to



THE AGGRESSOR OF THE FAR EAST

The Japanese have acted with justice and with moderation in their dealings with nations other than those of Asia. Her relations with Korea and China, however, make a darker record. Not content with the possible subjugation of China, she is already even casting longing glances toward India

decide between their claims, the king divided the honors and duties and appointed both men to assist him in bringing greater happiness to his people. The ministers spent much of their time picking upon each other's weaknesses. Anything that one suggested or did, the other objected to as impolitic or improper.

A river ran between the dwellings of the two ministers. One day, the older and wiser of the two went down to his bank of the river to ponder over some proposals which the younger minister had made to the king. He hoped to ridicule them at the next royal audience.



THE MODERN JAPAN

Already the day of the picturesque geisha girl and cherry blossoms seems lost in the dim recesses of the past, and to-day the nation, as fully modernized as her Western neighbors, is working vigorously for the total domination of Asia.

He glanced over at his rival's house, anger and vexation in his heart; then he turned his eyes upon the water. He knitted his brows and frowned; suddenly, his face cleared and he laughed aloud.

"Why do you laugh, sir?" the voice of the younger minister queried across the stream.

"I laugh, friend," the older man replied, "because, looking over the water to see your face, I found my own."

I returned recently from the Far East, regretfully convinced that much American criticism of Japanese acts in China



COUNT SEIKI TERAUCHI

Who successfully managed Japan's quiet domination of Korea. His selection as Premier of Japan has caused uneasiness among the friends of China.

has failed to perform useful service, not because it is unwarranted by facts or be-



MARQUIS SHIGENOBU OKUMA

Former Premier of Japan and leader of the "Asia for the Asiatics" movement. "Not a day is to be lost," he said recently, "in hurrying into operation" Japan's huge naval and military programme.



YOSHIHITO, MIKADO OF JAPAN

No longer does Japan regard the United States as her traditional friend. Her press is continually urging extreme measures against America, and the Japan Year Book for 1914 says: "The object of expansion of national armament is . . . to prepare against a possible emergency with the United States"

cause the Japanese are unwilling to listen to reason, but mainly because a great many influential Japanese question the sincerity of this criticism. They really fear American aggression—absurd as this fear seems to us—and they question American motives. These are unfortunate facts which should be borne in mind by those who seek a reasonable and equitable solution of Oriental problems. When we

criticize Japan and review her acts in China as the bases of criticism, it is the part of prudence, as well as of justice, to remember the weak points as well as the strong points of our own Far Eastern diplomacy. We should also give thought to those events which have, undoubtedly, profoundly influenced the acts of Japan, to her ultimate disadvantage as a friendly adviser of China. It is particularly important to approach the matter in that spirit now, because I think it is but fair to concede that events in several parts of the world are tending to force Japan's hand and to jeopardize her future usefulness as a friend of China.

Most American critics of Japan start from the assumption that our attitude toward the Orient has left nothing to be desired. We have championed, if we did not originate, the "Open Door" policy; upon that we are supposed to take our stand. Unfortunately for us, the record will not support the conclusion that we can justly criticize Japan without having regard to many other matters which, from the Japanese viewpoint, are not merely pertinent but vital to the issues.

Accident threw in our path a decade



BARON SHIMPEI GOTO

New Minister for Home Affairs in the Cabinet



HIROHITO, CROWN PRINCE OF JAPAN

Although popular opinion inclines to the belief that Japan is too poor to fight the United States, financial experts and bankers of both countries deny it. Japan is known to be hoarding a vast reserve of gold, of which \$325,000,000 has already been accumulated.

of inconsistency and blundering in Samoa. While south of the Equator, remote from Japan's island empire and brought to a satisfactory issue before Japan took her place as a World Power, the problems of Pago Pago, the difficulties with Germany and with England in the impossible task of "bearing the white man's burden" on three backs elbowing each other at every turn, have not escaped Japanese attention. Then, there came the matter of Hawaii. We followed the natural and inevitable path of destiny, as Mr. John W. Foster and others have pointed out. But the record shows that we did not lead ourselves. First, we took one course and then another. Our indefiniteness gave rise to the Japanese protest, excusing, if it did not justify, it.

Still closer to Japan are the Philippines. Responsible Japanese do not question the compelling logic of events which drew us to the Philippines. But the fact that we are there is indisputable. Permanently? Temporarily? And if either permanently or temporarily, upon what terms? These questions influence Japanese opinion and Japanese policy.

"Japan," says Mr. K. K. Kawakami,

"is certainly desirous of extending her interests in the southeastern Pacific"; but, adds this Japanese author of several important books:

It is not necessary that Japan should, in order to extend her influence and interest in the south, absorb the lands now under the American, Dutch, or French flags. Confining our discussion to the Philippines, it must be emphasized that Japan does not covet the



BARON ICHIRO MOTONO

Minister for Foreign Affairs in Japan's new Cabinet



territory. She would, of course, take it if she could get it for a song. It is absurd to tell Americans that the Japanese would not take the Philippines even for a gift. She would be glad to accept it, if America, with the unreserved consent of the Filipinos, were to hand it over to the Japanese without regret or reluctance. But the Japanese know the Philippine situation too well to fancy even for a moment that the islands can be had for the asking. They know that an attempt to acquire the territory would cause them endless trouble and countless expenditure, for the Filipinos who have been opposing the American rule established over them would even more strenuously oppose Japanese rule. Cer-



TO MAINTAIN THE PEACE OF THE ORIENT—

The Japanese navy since the Chinese-Japanese War has been increased tremendously and now ranks among the first five navies of the world. Americans who have lived in Japan declare that it is an open secret that the latter is preparing for war with America



tainly the Japanese are not foolish enough to think that such a game is worth the candle.

Balancing one fact against another and excluding sentiment or "traditional friendships," I think we may fairly accept the Japanese assertions that they prefer American occupation of the Philippines to European occupation of the Philippines, though we may think that they would like it best of all if they had them themselves. Lately, as many will recall, some Japanese writers have urged that Japan must get by purchase or otherwise the Dutch East Indies. Though such views



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—OR FOR USE AGAINST THE UNITED STATES?

The sword has ever been the emblem of Japan. Since the modernization of her armies, at no time has she ever been defeated, and each year vast sums of money are expended in increasing her already large and efficient army and navy.

are not common, they give point to the Philippine aspirations. If we grant that they, after all, prefer us in the Philippines to the Europeans, and in that light examine Japanese references to our presence in the Orient as a sovereign Power, we have in our hands a clue to some of the thoughts which move the Japanese in their estimate of American policies in relation to China.

The Hay "Open Door" notes were based upon European acts of aggression in China immediately preceding the Spanish-American War. The war was in progress while both Japan and America were given solid reasons for doubt as to the intentions of certain European Powers. Indefinite as our Philippine policy has been since 1898 and 1899, it was still more indefinite when Mr. Hay circularized the Powers and received assurances which must now be regarded as indefinite and unsatisfactory, because Europe purposely evaded the



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JAPAN OF THE ANCIENT INDUSTRIAL ERA—

Japan eagerly accepted Western ideas for the development of her own industries, but she bitterly resents American industrial expansion in China and has successfully blocked several extensive American commercial projects

main issue, "Spheres of Interest." Mr. Hay placed America on record as declining to recognize the "Spheres." He accepted the best that could be got at the time.

British statesmen from Mr. Gladstone and Sir Michael Hicks-Beach to Sir Edward Grey have pledged British faith in the "Open Door"

policy. Sir Michael, on the floor of the House of Commons, at a critical juncture announced amidst applause that "if necessary, England would go to war in defense of the 'Open Door'." Yet the "Open Door" and its natural corollary, the integrity of China, despite reiterated promises to uphold them, have been flagrantly violated since the ratification of the Hay circular. Japan has been the principal, but not the only, offender.

In 1898, as Professor Hornbeck has pointed out, "the scramble for concessions was cumulative." So, suspicious of one another's intentions, the Powers agreed to respect the *status quo*. "Certain nations," writes Mr. Hornbeck, "conspicuously the United States, Great Britain, and Germany, have subsequently lived up to the implications and prescriptions of these agreements. Certain others,



France in some degree, Russia more, and Japan most of all, have chosen to exert themselves along lines which no amount of explanation can reconcile with the conception of a desire scrupulously to observe either the spirit or the letter of the agreements to maintain the *status quo*."

The Oriental mind is quick to strip the flesh of assurance and assertion in order to lay bare the bone of fact. The Japanese have long realized that the "Open Door" and "Sphere of Interest" doctrines could not thrive in the same house. They seem disposed to accept as a fact, rightly or wrongly, the failure of the Hay Doctrine.

They say—with what truth we may ask ourselves—that we have been attempting to walk along two roads in the Orient. And they are not fully convinced, as yet, that events might not drive us into adding a naval base or two—if not more territory—in the Orient. I have yet to see the American, either private individual or official, who advocates this, but some Japanese believe it to be a fixed intent.

Our assertions that our ambitions in China are commercial and not political do not convince the Japanese for the good

and sufficient reason that the record shows that we have political aims in our dealings with China. These aims are legitimate, we know; we have nothing to deny or to conceal. They are not territorial at all. But our expression of these aims has been clouded by indecision, by irresolution, by a seeming unwillingness to face facts and to meet issues squarely. Manchuria, for example. Have we a policy regarding it? The Santuao dockyard contract, for another example. Were we consistent there? Excuse ourselves as we will or may, our record is not beyond reproach. Pick a dozen representative men and put

to them the question, "What is our Far Eastern policy?" and a dozen different answers, all equally sincere and each more or less interesting in its own way, will be the result. It is but fair to Japan to bear this in mind when we attack—with good reason—Japan's record of the last ten years in China.

Japan's record in China is that of an



—AND JAPAN OF THE MODERN INDUSTRIAL WORLD

On a recent visit to the United States to obtain a loan for Japan, a prominent banker, Baron Shibusawa, said: "American activities in the Chinese market might lead to hostile competition . . . which might be mutually disastrous"



opportunist groping in the dark. Japanese are well aware of this fact. There are conservative as well as jingo publicists in Japan. While I was there, my attention was drawn to quite a number of sharp criticisms of governmental policy toward China, some of these much stronger than most American criticisms, and along similar lines. Occasionally, one hears reflections of these criticisms from Japanese sources in America. Within a week after my return from the Orient, the *Japanese-American Commercial Weekly* began its leading editorial with the following statement:

Judging from the sequence of events in the Far East during the past decade or more, we can hardly believe that the Japanese Government has any definite policy with regard to China. That Japan desires, and



A FIELD OF COMMON UNDERSTANDING FOR THE RACES

The introduction of Western industrial civilization into Japan has not brought the Japanese and the Americans much closer together, but some progress in this direction has been made by the common enjoyment of Western sports

desires most sincerely, to maintain China's independence and integrity is unquestionable [*sic*] but she does not know how to accomplish that end. She has been groping in the dark. She has been following a policy of expediency and opportunism . . . etc.

The facts support the conclusion as to "opportunism" and "groping in the dark." And the world naturally questions seriously the purpose. Japan does not understand China. Does she understand herself? Do we understand ourselves?

Nine years had elapsed since the war with China—with a part of North China, as a matter of fact—when Japan threw down the gage to Russia. Of course, she had been preparing from the date that Russia "leased" Port Arthur. Japanese statesmen had said privately even to foreigners, years before the struggle began, that war with Russia was inevitable. It merely awaited the propitious time. And about four months before Japan struck the sudden blow at Port Arthur a Japanese said to me, "We are ready, now."

When the war came, and Russia and Japan moved their troops into conflict on Chinese soil, time had healed most of the wounds inflicted upon Chinese pride. The people of China blamed their Manchu rulers more than they blamed Japan for the humiliation inflicted nine years earlier. Russia's duplicity deceived neither the mandarin nor the man in the street. Yuan Shih-kai strongly urged upon Prince Ching and the Empress the desirability of supporting Japan. The Court and Government of China remained neutral, largely upon the advice of the foreign legations but also because there was a strong pro-Russian party within the ranks of the Imperial Grand Council and—what was more decisive—among the intimates of the strong-minded Empress. It will be remembered that both American and British war correspondents in Manchuria at that time made much of the friendliness manifested by the Chinese toward the Japanese troops. I was in China myself during the first eight months of the war, and the sympathy with Japan on the part of both officials and laymen was clearly in evidence. It was not strange. I had heard Russians in China

refer to Manchuria as "our country." They doubtless expected soon to annex it. The whole world, Americans particularly, cheered the brave little men of Nippon as they drove the tall Russians across the Yalu and, step by step, forced the fighting to the three-days' battle of Mukden. Japan gained hosts of friends in China during the war with Russia; they believed her words. The war won, she lost those friends. Her spirit of opportunism was the cause. She was not great enough to frame the grand policy which she talked—and live up to it.

JAPANESE WORDS—AND JAPANESE ACTIONS

She entered the war as the champion of Chinese rights, which Russia, undoubtedly, had infringed. She closed the war as successor in fact and in act to the Muscovite violations of Chinese sovereignty. She held possession of Port Arthur and joined with Russia in the virtual partition of Manchuria, because, while much ink was expended in the pretense of acknowledgment of Chinese sovereignty over Manchuria, in the leases and conventions that sovereignty was attacked anew from within and from below. And since then, her administrative acts have even more strongly belied her former professions of friendship.

She chose Russian friendship in preference to Chinese friendship. Making all due allowances for the various considerations which forced her hand, so to speak, the record proves rank shortsighted opportunism. And, as one mistake inevitably leads to another, so the blunder of 1905 has been parent to many subsequent errors of judgment in Japanese diplomacy concerning China. I dislike to write of them, for I like many Japanese and I wish to see Japan's influence for the right grow instead of weaken.

Japanese of high rank, explaining their Government's difficulties and anxiety as to China, have frequently pointed out the grave military menace to Japan in the double-tracking of the trans-Siberian railroad to the point of contact with Japan's war-won frontiers on the mainland of Asia. "We must be on our guard," has been the substance of what they have

said; "we may have to meet Russia once more." There have been cogent reasons for these suspicions and anxieties. The reasons still obtain, and only a few weeks ago in Tokio the suspicions were again expressed to me in conversation. Beyond a doubt, the recently concluded Russo-Japanese alliance is intended to avert this danger. But at what cost?

"The bear that never sleeps," expresses an Asiatic view of the persistence of Russian pressure. On the Amur, in Kuku-nor, on the Afghan heights and the plateaux of Tibet, it is an ever-present political question. China's difficulties with Russia in 1912 were so intense that several prominent Chinese patriots tendered serious advice suggesting drastic action. Some even resigned high office rather than quietly witness Russian aggression. Immediately before and since the outbreak of war in Europe, Russian intrigue in Mongolia had been a very dangerous thorn in the side of China. Japan, in active partnership with Russia (however strong the compelling cause), so long as Russia acts selfishly and in disregard of Chinese sensitiveness, invites Chinese suspicion and slams the door against Chinese friendship and Chinese confidence.

Japan had a great opportunity to serve China, herself, and humanity, when, quite legitimately, she attacked the German stronghold of Tsingtao. Instead of rising to this opportunity, because of her spirit of opportunism, she rode roughshod from one blunder to another. First, she ignored China's declaration of neutrality, paid absolutely no attention to the war zone, arranged according to Russo-Japanese precedent; she landed her troops in Lungkou, forcibly trampling upon China's protest. She pleaded "military necessity," Germany's excuse for violating the neutrality of Belgium.

Before Tsingtao was taken, she scattered her troops over Shantung in a manner which "military necessity" could not pretend to explain; this and her truculent attitude toward Chinese officials begot and compelled Chinese resentment. Some of the details of Japan's campaign in Shantung, confirmed to me personally in a way which establishes

their truth beyond question, cried aloud to Heaven for vengeance. There are some things so unspeakable that any attempt to excuse them merely makes bad worse. The conduct of responsible Japanese officers toward the Chinese women of Shantung marks an ugly page in the annals of Japanese warfare, which a friendly world had placed upon a very high plane, indeed. The *Kokusai* (Japan's official news service) has seen to it that due credit has been given to Japan's treatment of German prisoners and enemy traders. Not a word has been published about the hundreds of Chinese women and girls forced by Japanese officers to become the victims of Japanese lust. The story of how, upon their knees, in agony and in shame, with blood extracted from the tips of their fingers, they wrote their pathetic appeal to the Government of China; how the Chinese commissioners were received with contemptuous amusement—has yet to be written. I should not care to write it. The fact that the women were eventually released does not excuse the shameful deed. This is one of Japan's acts in China for which she cannot hope to make amend. The more reason why she should prove her friendship now, instead of talking about it in one sentence and disproving it in the next, if she really values the goodwill of China.

"Another act of Japan's which was not only a violation of the sovereignty of China, but also a seizure of enemy property in neutral territory," says Mr. F. Chang, of Harvard Law School, "was the taking possession of the Kiao-chau-Tsinanfu Railway. This railway is a German and Chinese private corporation, situated in neutral territory, and guarded by Chinese railway guards. The Japanese troops have taken possession of the whole line, taken its management into their own hands, and replaced the Chinese guards with Japanese soldiers. Kiao-chau was subject to attack and capture because it was fortified, might be used as a naval base, and was public in character. The railway was the private property of Chinese and German citizens, was not fortified or guarded by German soldiers, and was not leased to Germany. Even if it were leased to and the public property of the German Government, it would not be subject

to capture, there being no such rule of international law as sanctions the seizure of enemy property situated in neutral territory simply because it belongs to the enemy. Japan, however, justified her taking possession of the railway by alleging it was used by the Germans for the transport of troops and munitions of war to Kiao-chau. It is hard to believe there were German troops and munitions of war to transport from Tsinanfu to Kiao-chau. Even if there were, the act took place before the declaration of war by Japan. However, these are questions of fact. Japan has not only taken what German interest there was in the railway, but also ousted China from her possession of it. To the settlement of the status of the line and the legality of the Japanese possession China has a right."

If, after dislodging the Germans from Kiao-chau, Japan had proclaimed her intention to employ her victory in fact as a proof of her determination to end once and for all the accumulating dangers of foreign "Spheres of Interest" in China, her position as the champion of a "Japanese Monroe Doctrine for Asia" would have been irresistible. Earnest support from China and from the United States would have been immediate. Instead of taking this logical and reasonable course, she placed herself on record as China's immediate menace. Her victory over the tiny German garrison was made the excuse for new acts of aggression upon China.

She presented a list of twenty-one demands in a manner insulting to the Chinese Government. She demanded secrecy, threatening the Chinese President and ignoring China's foreign office; she violated the secrecy. The secret out, she issued, deliberately, false statements to the Treaty Powers, the United States included. She doctored the news and prevaricated to officials and the press. These statements are fully proved by official Japanese documents, and her false statements have been admitted to me personally on high Japanese official authority. There is no denying the facts. It was not until two months had passed (from January until March, 1915) that the public of America and Europe learned a material part of Japan's duplicity—the whole truth did not become available until she had, through her ultimatum,

troops, and warships, forced China to sign treaties and notes which tamper seriously with the rights of China and with China's obligations to Treaty Powers. This was sheer selfish opportunism. It was and is condemned as such, I am glad to say, by thoughtful, honorable, patriotic, far-sighted Japanese.

Confronted by the consequences of their blundering, the responsible Japanese officials offered fresh protestations of friendship to China. But, even since then, for almost every friendly word Japan has inflicted an unfriendly act. Steadily, she is building a stone wall of prejudice against her most vital interests in China.

THE ROOTS OF RIVALRY

After centuries of distance-decreed divorcement, East and West are meeting anew. They met before when the world was much younger, conditions very different. The misinterpretation of Kipling's verse—he had India in mind, I think, and not the greater East—symbolizes prevailing misconceptions as to earlier happier relations and particularly as to the causes and character of Oriental isolation. And there, I believe, lie the roots of rivalry.

In the Middle Ages, China walled herself in, not against civilized humanity, but against the roving barbarians. She stemmed the flood, and it poured into Europe, instead. At times, as in the cases of Genghis Khan and Nurhachu, the barbarian with his sword overcame the more scholarly and peace-loving Chinese. Meanwhile, the caravan trade was continued, East met West in Palestine, in Persia, and on the shores of the Mediterranean. The Chinese junk anchored alongside the feluccas and galleys in the trade ports of Tyre and Venice and the garookuhs of the Persian Gulf. The scholar, the teacher, the philosopher received a warm welcome in China until an impolitic act and religious rivalry as to the proper way of expressing God in the Chinese ideography originated misunderstanding and caused exclusion. Probably, this difficulty would only have been a temporary matter. Unfortunately, other more serious obstacles obtruded.

Mr. Foster, from whom I have already quoted, summarizes very accurately the spirit in which the West first knocked at the door of the East. He says:

In the sixteenth century, the Chinese Empire and its dependencies extended from Korea to India. Its rulers did not fail to note the aggressive spirit of the Portuguese, Dutch, and Spaniards, who had taken possession by force of the Philippines, Java, and other islands, and had acquired a foothold in India and the Malay Peninsula. The early intercourse in its own ports with these nationalities and the English, so marked by violence and bloodshed, led the Chinese authorities to stringent measures in the seventeenth century, which resulted in the closing of all ports except that of Canton, and even at that port foreign intercourse was conducted under very onerous conditions.

Then, on the East, the West used a club and the drug, opium.

The Japanese, like the Chinese, are famous mariners. Their ships, too, penetrated far into European waters many centuries ago. They reached America, we are told. It is on record that down to the closing decades of the seventeenth century, "both in regard to religion and commerce, the Government of Japan exhibited more liberality to the nations of Europe than the latter exhibited to each other." The Oriental is, by nature and habit, courteous and friendly. The overzealous and somewhat dangerously political character of early missionary work in Japan was responsible for the closing of Japan's doors against the foreigner. These doors remained closed until the politic Perry induced the Shogun to open them a little bit. While Perry did not employ force, Japanese remember, and we, too, should remember that he came first to Japan with four ships of war. And he gave them clearly to understand that on his next visit he should expect a favorable answer. When he returned in the following year it was with eight ships.

The first adventurous Western mariners were rude-spoken men, not polished diplomats. That was one reason why the more courtly and scholarly Orientals with whom they came in contact classified them among the "barbarians." The old-

time sailor loved his grog, and Jack ashore was a tough customer, even judging from his own accounts. Nature and the times made him so.

So the East did begin to look down upon the West, and the consequence was a rivalry, unconscious in many cases, but none the less present. This rivalry was intensified rather than removed by the manner in which the West knocked at the door of the East and demanded admittance during the nineteenth century.

The Japanese were prepared to respond in kind to the particular nature of the shock. Like the Irish, the Japanese are militant. It is in their blood. They cannot help themselves. Like the Irish, they possess natural virtues which, when employed, temper this aggressive disposition with justice and moderation. But they very naturally trained to fight.

They were fighting among themselves as a consequence of feudal misrule when they saw the warships of America and later those of European Powers. Before that, they had not been seriously impressed by foreign naval power. They stopped fighting among themselves and closed their ranks to protect Japan against foreign invasion. America and some of the European Powers, notably Great Britain, aided Japan to meet new world conditions. But—as in the matter of her tariff and the consular courts—Japan had to fight hard for her rights in the diplomacy of those days. Her friends, notably America, supported her in preserving her autonomy and in becoming the Power which she is to-day.

The Japanese are too prone to think solely of Japan's own part in bringing about the transformation from Old Japan to New Japan. They know full well what their great emperor, Meiji (Mutsuhito) did, what Ito did, what Oyama, Togo, Yamagata, Kuroki, and Nogi did. While they are familiar with what Townsend Harris did—and they are sincerely grateful to this truly great American—they do not realize, at least they seem not to remember their deep indebtedness to Mr. Roosevelt and his predecessors while their nation was in danger.

Japan defeated a portion of China—

most of China took no part in the war of 1894-5. Japan defeated Russia—in the field and at sea. Thence came a new movement over Nippon, a revival of the war spirit. The "Japanese Monroe Doctrine for Asia" is undoubtedly a manifestation of that spirit.

China, humiliated, invaded, despoiled by the West that knocked at her East, approaches the new meeting in a very different mood. By nature philosophical and contemplative, Chinese character is finer, more forgiving, more evenly balanced than Japanese character. China looks askance at this proposed "Japanese Monroe Doctrine for Asia."

First, it is too Japanese. The Chinese are not prepared to place themselves under the wing of Japan, even if they were convinced that Japan's motives are above and beyond reproach. They are not quite sure of these motives. The evidence, so far, is sinister; and "when you sup with the devil you require a very long spoon."

Secondly, China has her own ambitions. She desires to meet the West of herself, unhampered by a Japanese alliance or "Japanese Monroe Doctrine" which might nullify her opportunities for self-development and for usefulness in the service of humanity. Japan answered the West with a gun; China is answering with a prayer, "Peace."

CHINA AND THE "OPEN DOOR"

China is fully alive to other considerations, and well does she understand the nature of the new conditions affecting her own relation to the world which have arisen as a consequence of the European War. Before the war cleft most of civilized humanity into two contending camps, the eyes of each and every one of the great Powers were upon China. The upset of the Ta Ching dynasty and the political and social tumbler which was shaking up the human ingredients of Chinese life united manifestly in preparing a new era in China. The "yeast" of progress was working—for what? Few ventured to predict the ultimate shape in which such a vast mass would disclose itself; but one fact was accepted as certain. There, in China, lay waiting

the great stakes of enterprise. The time had come for the industrialization, not piecemeal but in whole, of the most industrious quarter of the world's inhabitants.

No longer could the nations afford to regard Chinese commerce as merely a matter of exchange and barter. Chinese trade questions could no more be considered from the viewpoint of the tea importer, the silk importer, the piece goods or yarn exporter, the cotton planter or broker or shipper. No longer was it a question of selling so many locomotives or so many tons of steel rails, a few dynamos or electrical parts; or of securing a railway or mining concession here or there in China. The immediate industrialization of a vast empire from top to bottom was involved. The possibilities were too huge for the ordinary mind. The prospect required the vision, the daring, the determination of a Harriman, a Hill, a Rhodes. China was opening up, herself, of her own volition.

That was the vital fact—before the war. And the war came—the red plague—blood and iron summoning art and science to the destruction of life and property in such gigantic scope that, as yet, no Homer, Napier, or Kinglake seems in sight to tell a tithe of its meaning. But those who deal in concrete values—who appraise the producing worth of men and of the products of men—the cumulative power of industrialized property, its users, directly and indirectly, and the uses to which such property is put; these men realize somewhat the staggering debt which will have to be paid by industry and through industry. Out of the smoke and fire of war come thoughts of the period of reconstruction which must follow the war. Where man has destroyed there shall he rebuild. By the sweat of his brow and the labor of his hands and the creative force of his brain man will seek atonement for the red years since 1914. There will be a new Europe in many vital respects to replace that temple which, Samson's-like, is crashing down upon the architects of its destruction.

China, amid her own troubles, visualizes what is coming. Our American part may—and I trust it will—be that of

peacemaker. China can help heal the wounds and she hopes to do so. She is ready to play her part.

China, herself, is giving new value, new meaning to the "Open Door." Even her younger statesmen are tendering freely the invitation. Her "Open Door" will not be reserved to a few alienated ports or "Spheres" arbitrarily asserted by suspicious and selfish alien states, relying upon force of arms to legalize robbery. All that she asks is honesty and fair dealing. Then all may come and welcome. Her "Open Door" covers all China; it is nation-wide in its scope and it is backed by the will of a fourth of mankind. It is an honest, as well as a tempting proposition. And it is a vitally necessary assurance of permanent peace.

Who desires that the present war should be merely the prelude in the West to a later conflagration in the East? Surely no war-fevered brain could regard such a possibility with favor or equanimity? Yet, if there is to be durable peace, China cannot be left out of account.

It is not merely a question of the inviolability of treaties—and that is important. It is not merely the right of militarily weak nations to the "Square Deal"—and that is important. It is a matter of sheer necessity.

The only possible alternative to the preservation of China's integrity is an international contest for the political partition and the industrial exploitation of China, with the active opposition of four hundred million people.

China's sovereignty over herself cannot be destroyed without challenging her destroyers to eventual destruction.

This fact will have to be considered in the Peace Conference. It must be considered now, so that the issues shall not be needlessly complicated beyond existing complications.

There is a strong feeling among the Chinese people that Japan is acting, now, with the wilful intent of further complicating the issues. There is an equally strong feeling in China that Japan so desires China's resources for herself that she is heedless of the present and future

necessities of even her own allies. Some go further and say that Japan would welcome an after-the-war condition in China that should be as unfavorable to Europe and to America as it might be made favorable to herself.

Huge fortunes will be made, great international industry produced, during the immediate development of China. The wage-earner is even more vitally interested than the employer. Conditions, to a great extent, govern the wage-earner; sometimes, although not always, the employer can master conditions as well as his men and women. China seeks a fair distribution of this prosperity which it will be her pride and joy to confer after the war. Has Japan or any other nation the right to intervene between China's opportunities and the needs of the American or European workman?

OUR POLITICAL RESPONSIBILITIES IN CHINA

I have mentioned the fact, too often ignored, that we have political as well as commercial aims in China. They point to the injury of no one, to the benefit of all. These aims are not merely defensible, they are of the very essence of international honor. No nation can assail them without thereby attacking its own right to national existence.

It requires no particular prescience to realize that the war will leave the world in a state of mind to appreciate at least something of the fact that nations have responsibilities to others as well as to themselves. As municipal law is now generally successfully invoked to protect the individual, it is no Utopia to imagine that we are steadily making headway toward the day when international law can generally be successfully invoked to protect nations, irrespective of their military standing. Hitherto, that has not been possible; but as this war has exceeded all its predecessors in sacrifice and in destruction, so, too, it has eclipsed all previous wars in its educational value. It has influenced all, individuals and nations, for good as well as for evil.

The shadow of war had scarcely lifted itself from overhead within these shores of ours, fifty years ago, when America

raised its voice for China. Ever since then, allowing for aberrations of judgment, mainly on minor matters, politically we have stood by China. Despite the conduct of a few individuals in one or two instances in China, we have stood by China. Our conduct, as a nation, our action, has never been selfish. It is wrong for Japanese and others to question our motives. They have always been beyond reproach.

Failing in some things, no doubt, there has been this in our general policy which is proof against scrutiny—we have always put China's rights and China's interest first. And we have always acted in the general interest of humanity.

Either as toward Japan, or toward Europe, we stand upon unassailable ground. We have recognized their interests while declaring our own.

Our declaration of the Hay doctrine was not made without due thought and study of the rights of others as well as of our own rights. It was a step in logical sequence to all that had transpired from the commencement of our diplomatic relations with the Orient. It recognized an obligation, the probability of which had been foreshadowed almost fifty years earlier by William H. Seward. It is an obligation as it should be a source of national pride.

We cannot fail to defend the Hay doctrine without proving ourselves recreant to an international trust as well as to our own ideals of right conduct. That fact justifies our political interest in China. We have further justification.

We have accepted responsibilities in the Philippines. Whatever fate has in store for the Filipinos, it is our duty as well as our right to participate in the politics of the Orient with the general aim of securing in the enjoyment of their rights and opportunities all the inhabitants of the Philippines. That right is incontestable. The duty is one not to be shirked by honorable men.

We are a self-governing nation. We do not regard our fundamental political institutions as "experiments," although others may so regard them. The fact that a fourth of the world's population,

through intrepid and able leadership, has disowned despotism and decreed the adoption of our political institutions is both of political importance and political interest to the Government and the people of the United States. Given a fair chance, the present Government of China should very soon develop into the United States of China. That is a matter of very serious importance to the United States of America.

Is there room for doubt that without harming in the least the legitimate rights of others we have legitimate political aims in China?

SOLVING THE PROBLEMS

Japan's acts in China interest us chiefly because they seem to threaten the peace of the Orient, and, therefore, the peace of the world. We could not afford to stand idly by and see China ground to powder between the millstones of Japan and Russia. Such a weak course upon our part would be as disastrous as it would be dishonorable. Should these nations, allied in aims and in methods, persist in a set policy of ignoring and trampling under foot their covenants with China and with other Powers having vested interests in China, what assurance have we that, given the opportunity, the same aims and methods might not be employed against us?

If treaties were, in fact as well as in name, sacred things, then China might be said to be protected against molestation by a perfect wall of sanctified ink and paper. The following summary will furnish an idea of the interlocking obligations "guaranteeing" the sovereignty of China:

The Hay circular telegram (July 3, 1900) to Great Britain, France, Germany, Russia, Austria, Japan, Italy, Spain, Holland, Portugal and Belgium. Approved by all.

Lord Salisbury's declaration (July 7, 1900).

Statement of British policy, House of Commons (August 2, 1900).

Anglo-German agreement (October 16, 1900).

Hay declaration (October 29, 1900).

Anglo-Japanese Alliance (August 12, 1902).

Hay note, approved by Great Britain, Germany, France, Austria, and Italy (during Russo-Japanese War) (January 13-23, 1905).

Anglo-Japanese Alliance (renewal) (August 12, 1905).

Lord Lansdowne's note to Russia (September 6, 1905).

Russo-Japanese Treaty of Portsmouth (September 5, 1905).

Franco-Japanese Convention (June 10, 1907).

Russo-Japanese Convention (July 30, 1907).

Root-Takahira Agreement (United States and Japan) (November, 1908).

Russo-Japanese Convention (July 4, 1910).

Anglo-Japanese Alliance (renewal) (July 13, 1911).

Our leadership is disclosed in this list. That is one reason why we cannot without dishonor shirk our responsibility and leave

China to shift for herself under the very doubtful "protection" of a "Japanese Monroe Doctrine for Asia."

The Japanese white book of May, 1915, is irrefutable evidence that the future of China cannot safely be entrusted to the care of Japan.

The history of the Far East since the first Hay declaration proves that government by legation is injurious to China, to Europe, to America; a dangerous temptation to Japan and to Russia; and a grave menace to the peace of the world.

The solution is definite action by all the Powers, restoring to China complete control over all her affairs; candid abandonment of the "Sphere of Interest" pretensions; withdrawal of foreign military forces from Chinese soil; full enforcement of the Hay doctrine.

The United States must lead the way, firmly declaring its purpose with a clarity of expression which none can misunderstand, and persisting in that purpose until it is accomplished.

HOW SHOULD A LAWYER BEHAVE?

HIS THE CODE OF ETHICS—SHOULD HE DEFEND A GUILTY MAN?—"AMBULANCE CHASERS" AND IMPROPER ADVERTISING—THE CORPORATION LAWYER AND THE PUBLIC

BY

BURTON J. HENDRICK

TO THE student of professional proprieties, no legal career offers quite the same interest as does that of Mr. Elihu Root. In the last few years certain episodes in Mr. Root's life have reached almost the proportions of political issues. Except for two of these episodes, it is not unlikely that Mr. Root would have been the Republican candidate for President in the recent election. But, at every suggestion of his name, two spectres arose that immediately made the suggestion impossible. As a young man of twenty-eight, just beginning his great legal career, Mr. Root had served as junior

counsel for William M. Tweed, the greatest of all Tammany embezzlers, and had defended him so zealously that Judge Noah Davis, who presided over the trial, had summoned him to the Bar for contempt of court. "Good faith to a client," said Judge Davis, addressing Mr. Root, and his youthful associate, Willard Bartlett, now Chief Judge of the New York Court of Appeals, "can never justify or require bad faith to your conscience; however good a thing it may be to be known as successful and great lawyers, it is even a better thing to be known as honest men." The other event that would have figured conspicuously in the recent Presi-

dential campaign, had Mr. Root served as the nominee, would have been his activity as counsel to the Metropolitan Street Railway, perhaps the most recklessly speculative enterprise in the history of American finance. According to the sworn testimony of William C. Whitney, the directing genius of this huge Wall Street operation, Mr. Root, during the time he served as counsel to the Metropolitan, gave a third of his time exclusively to that corporation.

Mr. Root's career thus illustrates a subject that has attracted great attention in the last few years—that of legal ethics. His defense of Tweed suggests the particular question which always fascinates the lay mind: Should a lawyer ever defend a guilty man? Or one whom he has every reason to regard as guilty? Mr. Root's association with the Metropolitan Street Railway suggests an even graver question: Should a lawyer use his talents to assist causes which, though technically on the windy side of the law, still operate against the public interest?

But Mr. Root's career is not the only one which has recently forced to the front this question of legal ethics. When President Wilson appointed Mr. Brandeis to the Supreme Court, the legal profession, at least that part of it which boasts of its "respectability," protested in almost violent terms. This manifestation astounded and also puzzled the average layman. What had Mr. Brandeis done to arouse such antagonism among men of his own profession? His main crime was not that he had devoted his career to evil causes or that, on the whole, the American people were any the worse because of his active life. No, the merest examination disclosed that Mr. Brandeis had rendered many great and valuable public services. But he had violated—so his brethren charged—the ethics of his own profession. He had done things which the most representative American lawyers had solemnly agreed that no lawyer should do. For many years, in particular, Mr. Brandeis had served as counsel for the United Shoe Machinery Company. Afterward, having severed this connection, he had accepted a retainer which compelled him

to oppose his former clients in a manner which, it was charged, directly contravenes this ethical canon: "The obligation to represent the client with undivided fidelity and not to divulge his secrets or confidences forbids the subsequent acceptance of retainers or employment from others in matters adversely affecting any interest of the client with respect to which confidence has been reposed."

Again, throughout the months of the Brandeis hearing, the public heard much, but probably understood little, of his association with the famous "Warren" case. Here the charge was that Mr. Brandeis had acted as counsel to two or more parties to the same suit, whose interests were antagonistic; that he was, to use his own explanation, not counsel to any one client, but "counsel to the situation." This again violates one of the most sacred canons of the Ethical Code. "It is unprofessional," says Section 6, "to represent conflicting interests, except by express consent of all concerned, given after a full disclosure of the facts. Within the meaning of this canon, a lawyer represents conflicting interests when, on behalf of one client, it is his duty to contend for that which duty to another client requires him to oppose."

A humorous aspect of this controversy was that one of the lawyers most active in opposing the Brandeis appointment was Mr. Elihu Root, whose own ethical standards have at various times been publicly discussed.

A CODE OF ETHICS FOR LAWYERS

Most people are probably surprised to learn that the lawyers, like the doctors, have a definite ethical code. For centuries the lay public has ridiculed and abused both professions. Great literary genius has persecuted doctors of law precisely as it has hounded doctors of medicine. "First of all," are the words which Shakespeare puts into the mouth of Jack Cade, as he describes his new ideal commonwealth, "let's hang all the lawyers." "A witch will sail in a sieve," says Congreve, "but the devil would not venture aboard a lawyer's conscience." The great-

est English satirist, Dean Swift, paints lawyers as "a society of men, bred up from their youth in the art of proving, by words multiplied for the purpose, that white is black and black is white, according as they are paid." Ben Jonson's epitaph on Justice Randall, "God works wonders now and then, Here lies a lawyer, an honest man," and Milton's reference to lawyers' "litigious terms, fat contentions, and flowing fees," fairly well reflect impressions that are still rather prevalent. But for centuries lawyers have had their ethical standards. Great Roman jurists waged warfare against the "ambulance chasers" of ancient days—the freedmen who made a business of worming themselves into private families, for the purpose of soliciting business; and certain ancient legal offenses, like champerty, or the purchase of lawsuits, and barratry, or the artificial incitement of litigation, indicate the odium in which these activities have always been held.

Only in very recent years, however, have the lawyers reduced their standards of conduct to written form. The legal ethical code has a history that almost parallels that of the medical code. The father of medical ethics, as I described in the December number of this magazine, was Dr. Thomas Percival, who formulated his rules for the guidance of his son, about to start in medical practice. Legal ethics also has its Percival. George Sharswood, who held the professorship of law at the University of Pennsylvania from 1850 to 1868, and who was afterward Chief Justice of Pennsylvania, is generally regarded as the greatest American authority on legal proprieties. Like Percival, Sharswood addressed his treatise to the young—in this case the law students of the University of Pennsylvania; like Percival, his writings are frequently platitudinous in thought and turgid in expression. He approaches the legal profession with the same awestruck veneration that inspires Percival's contemplation of medical practice. "There is no profession," he says, "after that of the sacred ministry, in which a high-toned morality is more imperatively necessary than that of the law." "There is no

profession in which so many temptations beset the path to swerve from the line of strict integrity. . . . There are pitfalls and man-traps at every step. . . . High moral principle is the lawyer's only safe guide; the only torch to light his way amidst darkness and abstraction." Indeed, Sharswood has almost as great a fondness as Percival for self-evident truths. Courts must be treated with respect, lawyers must accept adverse decisions courteously, they must not seek private interviews with judges, nor attempt to tamper with juries, nor misquote decisions, nor hold up as impeccable authority a law which has been repealed. A lawyer "should never unnecessarily have a personal difficulty with a professional brother." "He should neither give nor provoke an insult." "Let him shun most carefully the reputation of a sharp practitioner."

For many years American lawyers rested content with Sharswood's "ethics" as an unofficial guide. About ten years ago, however, certain leaders, especially those in New York City, started an agitation for a hard and fast legal code. New York especially felt the need of drastic action. In this city, because of its huge size and its large influx of foreigners, legal shysters were increasing at an alarming rate. The Bar Association, whose grievance committee had been organized to destroy these harpies, had conspicuously failed at its task. As a first step in reform, a committee, appointed by the American Bar Association, and containing such men as Justice David J. Brewer, Thomas H. Hubbard, William Wirt Howe, Alton B. Parker, Francis Lynde Stetson, and Ezra R. Thayer, spent several years formulating a legal code. At that time, the profession, in some localities, had too large a representation of the shyster, the barratrously inclined, the "ambulance chaser," the member with a system of runners—men who stopped short only of actual fraud and the criminal law. The committee submitted a "code of ethics" consisting of thirty-two canons. The Bar Association formally adopted this code in 1909, and, up to date, the Bar Associations of thirty states

have likewise made it their rule of conduct. This code informs the lawyer how he should behave in practically all possible and conceivable situations.

SHOULD A LAWYER DEFEND A GUILTY MAN?

What, then, in the estimation of the highest-minded lawyers of the present day, is the brethren's duty in such a case as that presented to Mr. Elihu Root a generation ago? Was he justified in defending that eminent scoundrel, Boss Tweed? Should a lawyer defend a man who is unquestionably guilty of murder? Pushing the question still further, should any self-respecting advocate lend his talents to saving the life of a man who has confessed his guilt?

On this point the distinguished gentlemen who framed the ethical code do not hesitate for an instant. A lawyer is not only permitted to defend a guilty man—it is his professional duty to do so. He violates legal ethics, not when he places his talents at the disposal of the most abandoned criminal, but when he refuses to come to his relief. After examining the principles involved, however, the most conscientious layman must accept this point of view. Any other course of conduct would be a perversion of justice. Indeed, the commonly accepted tradition of the profession provides that counsel may defend a guilty man, "even though apprised of the guilt of the accused."

The case of Charles Phillips, an eminent English barrister seventy years ago, illustrates this principle in all its details. In 1840, a Swiss valet, Courvoisier, was arrested on the charge of murdering his employer, Lord William Russell. The only thing that indicated his guilt was the discovery of certain blood-stained clothes in his trunk; the charge was made, however, and received wide credence, that other servants and possibly the police, in their determination to fix the blame on the foreigner, had manufactured this evidence. At least this was the theory upon which Phillips built up his defense. He was making great progress when a new development suddenly changed the situation. The stolen plate of the murdered man was

discovered in a certain part of London, the signs pretty clearly indicating that Courvoisier had placed it there. When this fact became known the valet requested an interview with his counsel.

"I have sent for you," he said, "to tell you that I am guilty—I committed the murder."

Naturally Phillips, who, until the discovery of the plate, had believed in the man's innocence, was astounded. But he at once gave the man what he considered the proper advice.

"Of course," he said, "you are going to plead guilty."

"No, sir," answered his client. "I expect you to defend me to the utmost."

Evidently Phillips faced this great ethical question in particularly distressing form. What was he to do? He was about to throw up the case, but a colleague suggested that he seek the advice of the judge. Baron Parke, who presided over the court, asked if the prisoner insisted on a defense. When informed that he asserted this right, the justice told Phillips that he must go on with the case. Phillips did so and defended the guilty man with great eloquence and ability—though unsuccessfully. When the public learned that Phillips had had the man's confession of guilt, a great scandal resulted and the distinguished barrister suffered a loss of reputation that pursues him to this day. The fact that, before receiving the confession, Phillips had attempted to fasten the guilt upon others, seemed to make his behavior especially base. The fact was, however—and this must be kept in mind in appraising his conduct ethically—that Phillips had dropped his theory of police persecution as soon as he had had the man's confession and that he had rested his argument upon points of law.

THE RIGHT OF THE GUILTY TO TRIAL

Still, the modern man asks, why should a judge practically order a lawyer to defend a self-confessed murderer? There are plenty of good reasons for his action. We might put the question in a form equally pertinent: why should the judge himself, learning of the confession, have

given Courvoisier a trial? Why should he not have directed the jury to bring in a verdict of guilty and sentenced the prisoner forthwith? Those who most strongly criticized Phillips for his course as counsel would have regarded any such course as improper. But, if a guilty man has any right to a trial—and the Constitution of England as well as that of the United States guarantees that right—he likewise has a right to a defense. And he has a right to a defense for the same reason that he has a right to a trial. The very foundation of justice insists that only the evidence in the case can convict a man. No judge and no jury should be called upon to pass judgment until all the circumstances are placed before them. This supreme fact represents one of the highest achievements of civilization. In countries where justice, as Western nations understand it, does not prevail, innocence or guilt is largely a matter of opinion—no rules of evidence prevail, the magistrate or judge ruling usually as the spirit moves. But no one really knows, or can form a valid opinion as to whether a man is guilty until he obtains all the evidence. The mere fact that the prisoner, in the present instance, admitted his guilt, did not change the situation, for in spite of this admission he might still be an innocent man. Indeed, cases are quite common in which people confess to crimes which they have never committed. Courvoisier might conceivably have made this confession because he was insane, or because he was seeking to protect the real murderer. Such things happen constantly. Many years ago, in Vermont, an accused man went on the witness stand and there confessed that he had murdered a particular individual. He had hardly finished his confession when the supposedly dead man made his appearance in the flesh. The law wisely recognizes this tendency, since it provides that no person can be convicted solely on his own confession—it must be substantially corroborated, like all other testimony.

Thus a lawyer who refuses to defend an apparently guilty man is substituting his own opinion, usually formed hastily and

on insufficient evidence, for the orderly processes of justice. One of the greatest and most conscientious of British jurists, Sir Matthew Hale, vowed, when he started his legal career, that he would defend no man in whose innocence he did not believe. For some time he held to this resolve; acting from this high motive, he refused to take one particularly famous cause in which the man's guilt apparently stood on the surface. Responding to an insistent demand, however, he consented to examine the matter closely. He soon discovered that the bungling presentation of other lawyers had given the case its bad appearance; he himself took charge and demonstrated the prisoner's complete innocence. This experience made him change his rule of conduct. Every lawyer of large practice can tell similar anecdotes; it is not at all unusual that an advocate, starting his case, believes in his client's guilt, and then, as the facts develop, discovers that he is innocent. Had the rule that so shocks many laymen not prevailed, thousands of innocent men would go to prison or lose their lives. Practical justice recognizes this principle, for the judge, in case the prisoner cannot afford counsel of his own, always assigns a lawyer to defend him, and a lawyer so assigned has no option—he cannot legally decline the task. Thus the situation is not whether a lawyer may defend a superficially guilty man, for, under the law of the commonwealth, he must. This ethical rule has the sanction of that principle which underlies Anglo-Saxon jurisprudence, that a man is innocent until he is proved guilty.

"AMBULANCE CHASING"

The other point upon which the layman falls foul of lawyers is the offense which, in legal parlance, is known as barratry, but which, because of its most characteristic modern manifestation, is usually called "ambulance chasing." Speaking broadly, this signifies soliciting business or even artificially stimulating it. The new ethical code not only forbids such activities, but takes the advanced stand that "a duty to the public and the profession devolves upon every

member of the Bar, having knowledge of such practices upon the part of the practitioner, immediately to inform thereof to the end that the offender may be disbarred."

The evil at which this canon aims prevails to an enormous extent. Its existence was one of the chief reasons for the adoption of this ethical code. Every profession has its prostitutes, but the law seems to have attracted an unusual quota. The "ambulance chaser" plays like a harpy upon the miseries of mankind. There are large firms, organized for this particular purpose, that do an enormous business. They have their "cappers" and "runners"—agents, frequently secret ones, whose business it is to inform them of possible clients. Policemen thus receive commissions for reporting accidents; physicians, nurses, and hospital attendants turn an occasional penny, and clerks in offices scan the obituary columns and death notices. An injured man has hardly recovered from the anesthetic when the accident lawyer hands him a document, with the injunction: "sign here"—this paper placing his claims for damages in the control of a particular firm, with an agreement as to the division of the award. Such agents get on the trail of newly made widows, seldom waiting, competition is so keen, for the conclusion of the funeral. Other rakers of legal offal manifest the same tendency in different ways. In every community there are lawyers who painfully go over titles to property, in the hope of discovering flaws that will give an excuse for a litigation. There are others who read the newspapers line by line, seeking editorial slips that will form a basis for libel suits. Others, by devious ways, specialize in discovering seamy episodes in the lives of rich men—an activity from which thousands of divorce suits and breach of promise cases develop every year.

Many of these offenses are indictable at law; the new compensation acts have made others less prevalent; but the abuses lie deep in human nature and are difficult to stamp out. In its effort to minimize them, the new ethical code prohibits the solicitation of business in

practically every form. Even a lawyer who voluntarily advises any one to bring a law suit is without the pale. The ethical code is just as severe as the medical code against advertising; indeed, this canon seems to have been taken bodily, even in its phraseology, from the ethical "principles" of the American Medical Association. The lawyer, like the doctor, may distribute ordinary business cards, but he must not advertise in newspapers or other periodicals, employ "touters," or give commissions for business. Most people will be surprised, in view of current practice, to hear that, "indirect advertisement for business by furnishing or inspiring newspaper comments concerning causes in which the lawyer has been or is engaged, or concerning the magnitude of the interests involved, the importance of the lawyer's position and all other self-laudation, defy the traditions and lower the tone of our high calling and are intolerable."

"ETHICAL CLINICS"

This canon evidently represents the counsel of perfection; the rule against direct advertisement, however, is fairly well enforced. The New York County Lawyers Association holds what are called "ethical clinics." It has a committee, headed by Mr. Charles A. Boston—the man who has led the recent movement for professional house-cleaning—to which any lawyer can submit a question of professional propriety and receive advice. The "clinic" periodically publishes all these questions, accompanied by its decisions; in time these collections, carefully indexed, will form a guide that will meet almost every imaginable situation. Some of the matters that torment the lawyer's conscience will probably amuse the outsider. Here, for example, is a practitioner who has acted as counsel for a woman client in a divorce case in New York state, where laws forbid the remarriage of the guilty party. In this case the defendant had wished to marry the correspondent and asked for legal advice about doing it. The counsel had advised her to marry in an adjoining state; not only had he given this advice, but he

had himself accompanied her and the co-respondent to Connecticut and "given the bride away." Evidently this action had injured his standing and he writes to the "ethical clinic" for advice and presumably for comfort. The clinic solemnly decided that the lawyer had not offended in advising his client to marry in an adjoining state, since the highest courts had decided that such marriages were valid; but that his action in facilitating the ceremony and even playing a conspicuous part in it, "is likely to be misunderstood . . . tends to diminish public respect for the profession if not for our courts and their decrees and . . . is open to criticism."

"QUACK" MEDICINES OF THE LAW

But the great mass of these questions deal with the frenzied solicitation of business. In practically all cases the "clinic" rigidly rules against these practices. The only advertising permitted, other than the business card, is "a well-merited reputation for professional capacity and fidelity to trust." The type of advertisement sent for approval or disapproval pictures well the extent of this evil. Here is a specimen question and answer:

QUESTION NO. 45

An inquirer has handed the Committee a series of advertisements appearing in a daily newspaper in the forms hereto annexed, and has asked an expression of the opinion of the Committee upon the propriety of such advertising by lawyers:

LAWYERS

A.—Able lawyer, specialist family troubles, private matters, &c.; furnishes reliable advice; all cases handled; satisfaction guaranteed; quick results; domestic relation laws of all states explained. Call, write,

LAWYER.

A.—A.—A.—A.—ACCIDENTS, estates, family troubles; cases handled successfully; satisfaction guaranteed; strictly confidential; matters quickly settled; no fee unless successful. Call, write, 'phone
LAWYER

ACCIDENT CASES, DOMESTIC TROUBLES and all legal difficulties STRENU-

OUSLY handled to YOUR SATISFACTION
LAWYER Evenings till 9.

FOR results see me; reliable; experienced, successful; accident, family troubles, all cases, consultation free. Call or write. LAWYER

LAWYER (American), highest standing, consultation free; notary public
Sundays, evenings till 9.

ANSWER

In the opinion of the Committee, all of the advertisements appended to Question No. 45 are improper.

The first four are also objectionable, because they seem to indicate a willingness to take all cases, irrespective of the merit of the cause; and the first three have the demerit of containing an impossible and therefore false and misleading guaranty of satisfaction.

The evil back of such things is that of contingent fees. The highest ethics would prohibit contingent fees in all instances. They are improper, because, when the lawyer makes an arrangement to be paid only in case of success, he ceases to be counsel, but becomes a partner of his client in a business enterprise, and is thus inspired by the determination to win his case "honestly, if he can, but, at all costs, to win." Moreover, as these advertisements show, a contingent fee lawyer will take any case, with no regard to its merits, and thus the custom constantly incites to dishonest litigations and to blackmail. In the event of success, the lawyer usually robs the client, frequently walking off with 50 per cent. and more of the award. In its desire to curb these abuses, the American Bar Association found one difficulty, for the law unfortunately does not recognize contingent fees. Should an ethical code denounce a practice which has this sanction, and which, in certain cases, is not illegitimate? It was urged that there were plenty of poor men who had valid cases and yet had no money to pay lawyers, unless they obtained it as a consequence of a favorable verdict. What could be done in such cases? And so the ethical code does permit contingent fees, but attempts to safeguard the practice. "Contingent fees, where sanctioned by law, should be under the supervision

of the Court, in order that clients may be protected from unjust charges." In general, the code also condemns all extravagant fees; it expressly lays down, as an ethical principle, that any lawyer may testify as an expert against a brother who is guilty of gouging a client. Most people will be surprised to learn that lawyers, like doctors, are expected to make low charges to impecunious people, and even to charge nothing at all if the client is too poor to pay. As is the case with physicians, lawyers are expected to render free services—in reasonable degree—to their brethren and to their widows and orphans.

THE CORPORATION LAWYER

But more important than all these matters is that other activity in which lawyers, in the last thirty years, have found almost a new profession. In modern times the so-called corporation lawyer occupies a position almost as distinct as the jury pleader of Daniel Webster's day. This gentleman is half business man, half legal expert; he does not necessarily plead in court; his activities may be limited to legislatures, to appearances before Congressional committees, to drawing charters, trust agreements, railroad leases, to disentangling, in the seclusion of his own office, all kinds of knotty legal questions. This type of legal mind has acquired an unenviable fame. There is a popular impression that its chief function is not the direct interpretation of law, but the discovery of methods by which the corporation can accomplish its ends and still keep its officers out of jail. Its main ambition, we have been told, is to "beat the law." Rightly or wrongly, the popular impression that Mr. Elihu Root is a lawyer of this type made him unavailable as a Presidential candidate. What is the attitude of the ethical code against this particular kind of legal work?

Strictly interpreted, the code does not endorse activities of this kind. The practices of the Metropolitan Street Railway were very evil; no lawyer of standing should ever have identified himself with

the financial operations of that corporation. Franchises secured through political influence were capitalized at monstrous over-valuations; the stock so secured was boomed on the Exchange to unheard of prices; it was then sold to innocent victims; the road was gutted in order to pay dividends on these securities to give them salable value. After fifteen years of the wildest exploitation, in which the insiders made millions, the stockholders were left with a wrecked and bankrupt property, and the public was left marooned with a disgraceful transit service. Mr. Root could probably plead that all this was none of his doing, that he had no concern with stock-watering, administration, or Wall Street speculations. This is undoubtedly true. His work, his friends insist, was merely giving advice on points of law; so long as this advice did not contravene the law, his connection was legitimate. But the question goes deeper than that—indeed, the fact that his advice was entirely legal, that legal technicalities permitted this great corporation crime, is the very point at issue. Should any lawyer associate himself, even in a legal capacity, with a company that pursued such wicked courses? The people who purchased Metropolitan did not understand this distinction; they did not understand that Mr. Root's approval of the legality of the corporation did not include his moral approval of its acts; how many were influenced to purchase worthless stock by their knowledge of Mr. Root's connection with the road? The final canon of the ethical code apparently covers the case of the corporation lawyer, though in general instead of specific terms: "No client, corporate or individual, however powerful, nor any cause, civil or political, however important, is entitled to receive, nor should any lawyer render, any service or advice involving disloyalty to the law whose ministers we are . . . or deception or betrayal of the public. . . . Above all a lawyer will find his highest honor in a deserved reputation for fidelity to private trust and to public duty, as an honest man and as a patriotic and loyal citizen."

MAN AND HIS MACHINES

USEFUL INVENTIONS

A PRACTICAL DRAWING TABLE—A SNOW-PLOW ATTACHMENT FOR AUTOMOBILES—A COMBINED PHONOGRAPH AND LAMP—A METHOD OF ENLARGING PHOTOGRAPHS WITHOUT A LENS—A HANDY LAWN EDGER

AN ADJUSTABLE DRAWING TABLE

THE disadvantages of bending over a fixed drawing table all day long have been overcome in a new drawing table which can be instantly adjusted to any desired position by merely turning a hand-nut located on either side of the table and which increases the efficiency of the draftsman to a great extent. The table, which is the invention of an experienced draftsman, is so extremely simple in operation that there is nothing to get out of order, yet it is so substantially constructed that there is no shaking to blur accurate drawings and there is a place for holding whatever utensils the draftsman may require. Furthermore, the draftsman can substitute his own drawing board for the ordinary top if he desires.

A NEW CHANGE MAKER

MANY banks, theatres, stores, and railroad ticket offices are using a new sort of change maker which differs from the ordinary change maker in that, instead of furnishing certain definite amounts in change, it computes and pays out the difference between the amount tendered by a purchaser, one dollar or under, and the amount of the purchase. Also, the money is paid direct from the machine to the customer without being handled by the cashier. For example, suppose a customer makes a purchase amounting to thirty-five cents and hands the cashier a dollar bill. All that the latter has to do is to push a key marked "35" and sixty-five cents will come rattling down into the coin box in front of the cashier's window, to be taken up by the customer himself.

AN AUTOMOBILE SNOW-PLOW

A SNOW-PLOW attachment which can readily be attached to any automobile has recently been put on the market, for the convenience of farmers and other dwellers in the country where the snow often piles high in the roadway and there is no municipal force to remove it.

The plow (which is really two plows on the frame of the bumper) does not attempt to remove the snow from the middle of the roadway but merely pushes it to the side from in front of the wheels, so that the latter may obtain a purchase on the road-bed, thereby using a minimum of power. A runner guard at the bottom of the plows prevents them from running into the road-bed. The plows are attached in front of the front wheels and can be raised or lowered at will. Special springs make them adjust themselves to

variations of the road surface and help to raise them over obstacles.

Furthermore, when the snow has disappeared the plows are uncoupled from the ends of the bumper, the ends of the bumper are turned up and covered with screw caps, and the bumper is widened out by its centre coupling.

AN EFFICIENT COPY HOLDER

TO SAVE the stenographer's time and to relieve the severe strain on her eyes from shifting constantly from one line of copy to another, a copy holder embodying a new principle, that of a stationary point of vision, is a new device which has been successfully used in many offices.

This copy holder supports the copy directly behind the typewriter in an upright position, and by merely touching a key the operator raises the copy up line by line back of a stationary line indicator. Thus the line to be copied is constantly pointed out directly in front of the operator, who maintains a comfortable erect position without stooping over or bending to one side to read her notes. Furthermore, in case of interruption the stenographer may leave her work and on her return instantly resume her typewriting at the correct line without having to read a page of notes to find the line where she left off.

The copy holder is attached to the typewriter desk, separate from the typewriter, avoiding vibration. The operating lever for raising and lowering copy projects just alongside the typewriter keyboard.

A RIFLE BARREL DRILLING MACHINE

A NEW method of drilling and reaming rifle barrels which differs radically from the ordinary method has been employed in a new machine which drills and reams twelve barrels simultaneously. The advantages claimed for such a machine over other drilling machines are many. Perhaps the most striking departure from conventional methods heretofore employed is that the rifles are handled vertically instead of horizontally and there are twelve being drilled at one operation instead of two. Each spindle on the machine is driven by a separate, variable speed motor. An automatic electric switch instead of a mechanically operated clutch is provided for stopping the machine should a drill stick or become dull. The feed is provided by counterweights instead of a positive screw, which automatically adjust the rate of feed to suit varying conditions in the size or bore and the hardness of metal.



A CONVENIENT DRAWING TABLE

Which by means of a knob set in the frame, can be easily adjusted to suit individual requirements

A ROTARY AUTOMOBILE JACK

A NEW appliance known as a rotary automobile jack has been patented lately. It is constructed on the rotary level principle and through the application of this principle the car lifts itself, or rather furnishes the power with which it is lifted, in contrast to the jacks ordinarily used, which depend on vertical leverage for their action.

The jack is composed of two essential parts, the upper being adjustable to allow for different heights of axles and different sizes of tires. To operate it the jack is adjusted to the proper notch and is put under the axle of the wheel that is to be jacked up. Then the automobile is put into low gear and run up on to the jack. A slight jar when the jack is on the tangent will indicate to the operator the time to apply the foot brake quickly. The same idea is followed out in

jacking up the rear wheels except that the car is backed up on to the jack.

Needless to say the jack saves much unnecessary labor.

A NOVEL PHONOGRAPH

A COMBINED phonograph and lamp, whereby the cumbersome cabinet of the ordinary phonograph is done away with, is a new idea which is economical and of special value where space is limited, as in apartment houses. In the base of an ordinary lamp is set the phonograph, which is operated by electricity, as is the lamp, although both may be operated independently. When not in use the hood of the lamp is lowered and the mechanism of the phonograph is entirely concealed, making the device appear to be just an ordinary lamp. It is claimed that by this combination the tone of the phonograph is greatly improved because the sound waves travel upward through the stem of the lamp and are evenly diffused throughout the room. The heat waves from the lamp, seeking outlet above the shade, are thrown off in myriad angles and tend to further diffuse the sound waves with which they mingle.

There are two switches in the base of the lamp. One switch controls the motor while the other regulates the speed, and there is no winding by hand.

ENLARGING PHOTOGRAPHS WITHOUT A LENS

A PHOTOGRAPHER, Mr. Alfred J. Lotka, has patented a novel scheme whereby it is possible to enlarge photographs without the use of a lens.

The apparatus, which is extremely simple, has been constructed of materials readily obtainable on the market, consisting chiefly of a wooden frame



A CHANGE CALCULATOR

By pushing down a key with a number corresponding to the amount of the purchase the exact change between the price and a dollar is automatically supplied



A SNOW PLOW ATTACHMENT FOR AUTOMOBILES

Which does not remove the snow from the middle of the roadway but pushes it from under the wheels to the side, thereby using a minimum of power

or box and two strips of brass that have received no other treatment than a cleansing with brass polish.

The negative to be enlarged is drawn past a narrow slit through which light is admitted, so that every portion of the negative is in turn illuminated. Under the negative a sensitive plate is at the same time

drawn past the slit, but at double the speed of the negative. On developing the plate thus exposed, a distorted copy of the original is obtained, for it is drawn out to twice its length in the direction of motion, while it is unchanged in breadth. The copy thus obtained is then subjected to a repetition of the process,



A COMBINED PHONOGRAPH AND LAMP

An artistic lamp (left) which contains a phonograph, disclosed by merely raising the hood when desired (right), which, it is claimed, possesses a smoother tone than that of the usual cabinet style machines



A LABOR-SAVING AUTOMOBILE JACK

By the use of this jack the automobile raises itself off the ground, saving the labor and energy necessary in operating ordinary jacks which depend on vertical leverage for action

the motion being now, however, at right angles to the lines drawn out in the first operation. The final product is an enlarged copy of the first picture, on four times the original scale. It is, like the original, a negative, and can be reproduced by the ordinary process.

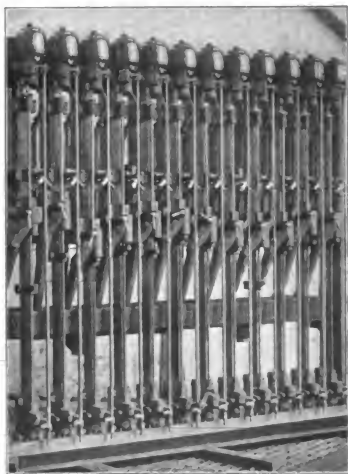
AUTOMATIC BOTTLE TOP

A METAL top that fits snugly over the top of a milk bottle and operates automatically is in many cases replacing the cardboard cap in general



FOR THE STENOGRAPHER

By merely pressing down a key the stenographer raises the copy line by line back of a stationary line indicator, preventing straining of the eyes due to shifting constantly from one line of copy to another



FOR DRILLING RIFLE BARRELS

A space- and time-saving machine drills twelve rifle barrels at one operation instead of but two barrels, as in the machines heretofore employed for this purpose and has many other advantages



A SANITARY BOTTLE TOP

By means of a weight fastened on the underside the lid is kept closed when the bottle is upright

use for covering milk and cream bottles. The device clamps to the mouth of any bottle whether of pint or quart size and has a lid which is kept closed when the bottle is upright by a weight on the under side.

When the bottle is tipped the lid opens automatically. There is also a lip projection which converts an ordinary bottle into a pitcher. The weight is sufficient to keep the lid securely closed.



A HANDY GARDEN TOOL

A simple, inexpensive, but essentially practical lawn edger for keeping trim the edges of walks and borders of flower beds

A PRACTICAL LAWN EDGER

AN INEXPENSIVE but efficient garden tool for keeping the grass and weeds from encroaching on the paths is of interest to dwellers in the country or in the suburbs of a city who are waging incessant warfare against weeds.

This labor-saving tool is extremely simple in construction, consisting as it does of a knife blade made of carbon steel attached alongside a small iron wheel, both of which are mounted upon a long wooden handle similar to the handle of a rake. The knife makes a smooth clean cut about an inch and a quarter wide and from an inch to about two inches deep.



A NEW METHOD OF ENLARGING PHOTOGRAPHS

By means of an extremely simple apparatus, composed mainly of strips of wood and brass, it is possible to enlarge photographs without the use of an expensive lens

The World's Work

ARTHUR W. PAGE, EDITOR

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MR. CHARLES M. SCHWAB

CHAIRMAN OF THE BOARD OF DIRECTORS OF THE BETHLEHEM STEEL COMPANY, WHO RECENTLY ANNOUNCED THAT HIS PLANT WAS 50 PER CENT. GREATER THAN THE KRUPP WORKS IN GERMANY. "I BELIEVE," SAID MR. SCHWAB, "BETHLEHEM IS NOW ONE OF THE GREATEST ASSETS THE UNITED STATES HAS AND . . . IN THE EVENT THAT THE TIME EVER COMES WHEN IT NEEDS IT, THE PLANT WILL BE AT THE DISPOSAL OF THE UNITED STATES GOVERNMENT"

THE WORLD'S WORK

FEBRUARY, 1917

VOLUME XXXIII



NUMBER 4

THE MARCH OF EVENTS

THE proposals of the League to Enforce Peace have received a very wide sanction in the United States—and deservedly so. There are good and sufficient reasons why the United States should recognize its responsibilities to civilization. There is good reason why the United States should be willing to do its part to maintain, not peace, but justice. The League is wrongly named. The large proportion of its members would not endorse injustice to maintain peace, but the peace movement in this country includes thousands who would. If the League's proposals are to receive the support of persons who believe in honor, justice, and democratic civilization, the League should make it plain that it has higher aims than peace—for these things are infinitely more valuable than peace.

But as Senator Borah pointed out in his speech on the endorsement of the President's note, the League's proposals would mean for us a new responsibility. If we give our word we must be ready to live up to it, and this may mean war. If we have agreed as a nation to enforce a strict accountability we should live up to it literally.

On the 23d of October, 1916, when he was still Foreign Secretary of Great

Britain, Lord Grey, of Fallodon, said, in discussing the League:

If the nations in the world after the war are to do something more effective than they have been able to do before, to bind themselves together for the common object of peace, they must be prepared not to undertake more than they are prepared to uphold by force, and to see when the time of crisis comes that it is upheld by force. In other words, we say to neutrals who are occupying themselves with this question that we are in favor of it. But we shall have to ask when the time comes for them to make any demand on us for such a thing: "Will you play up when the time comes?"

It is a fair question. If we mean to do our part in international affairs, our entry into the international field is justified. Otherwise it is not.

There are but two decent courses for the American nation, with its hundred million people, to pursue. One is to join a league of nations, lead the league of nations for justice first and peace afterward, and be ready to do our part in enforcing the league's decisions. The other course is to join no league at all but attend to our own affairs, by ourselves. To subscribe to high moral principles and be ready to abandon them when attacked is beneath us.



Photographed by Paul Thompson

MR. EDWARD R. STETTINIUS

OF THE FIRM OF J. P. MORGAN & COMPANY, FOR WHOM, IN A LITTLE MORE THAN A YEAR, HE PURCHASED SUPPLIES ON BEHALF OF THE ALLIED GOVERNMENTS VALUED AT \$1,800,000,000, AND IN ONE CLASS OF MUNITIONS THE PURCHASES AMOUNTED TO \$1,000,000 A DAY [See page 399]



MR. BENJAMIN STRONG, JR.

THE FEDERAL RESERVE BOARD HAS RECENTLY AUTHORIZED THE FEDERAL RESERVE BANK OF NEW YORK, OF WHICH MR. STRONG IS GOVERNOR, TO APPOINT THE BANK OF ENGLAND AS ONE OF ITS AGENTS TO FACILITATE THE MECHANISM OF FOREIGN EXCHANGE. OTHER FEDERAL RESERVE BANKS MAY ALSO PARTICIPATE IN AGENCIES WITH THE BANK OF ENGLAND AND OTHER FOREIGN BANKS IF THEY SO DESIRE



Photograph from *L'Illustration*

FORT VAUX, THE SHUTTLE-COCK OF VERDUN

AFTER ITS RECAPTURE FROM THE GERMANS BY THE FRENCH IN OCTOBER, 1916. TO ALL APPEARANCES ONLY A MOUND OF LOOSE EARTH BUT WITH MUCH OF ITS INNER SHELTER ENTIRELY INTACT. THE PHOTOGRAPH SHOWS THE DEVASTATION OF THE CONTINUAL RAIN OF SHELLS THAT IS CHARACTERISTIC OF THE NEW METHODS OF ATTACK



Photographs from *L'Illustration*

THE SHELL-PLOWED BATTLEFIELD AT FORT VAUX

AFTER EIGHT MONTHS OF THE HEAVIEST ARTILLERY ATTACK IN THE HISTORY OF WAR. THE LOWER PHOTOGRAPH SHOWS THE TRENCHES WHICH CONNECTED THE FORT WITH THE REAR. COMMUNICATION BETWEEN THE GERMANS IN THE FORTS OF DOUAUMONT AND VAUX WAS PRACTICALLY CUT OFF BY THE FRENCH FIRE, AND NOT A SPOT OF LAND AROUND THEM WAS LEFT UNTOUCHED BY SHELLS

(See page 416)



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MR. BERNARD N. BAKER

SHIP OWNER AND STUDENT OF THE PROBLEMS OF A MERCHANT MARINE, APPOINTED BY PRESIDENT WILSON A MEMBER OF THE FEDERAL SHIPPING BOARD, WHICH WILL INVESTIGATE SHIPPING CONDITIONS AND REGULATE AND FIX RATES FOR WATER TRANSPORTATION AND ORGANIZE A \$50,000,000 COMPANY, FINANCED BY THE GOVERNMENT, TO OBTAIN SUCH SHIPS AS MAY BE NECESSARY FOR A GOVERNMENT-OWNED MERCHANT MARINE

WHAT THE PRESIDENT IS TRYING TO DO

THE President's note concerning the possibilities of hastening peace, both from its contents and its time of despatch, unfortunately adds strength to the growing fear, here and abroad, that he sees no principle involved in the war and that his anxiety is merely for peace as soon as possible, whether it be a just or unjust peace.

From the beginning of the war the President has continually talked of the part he hoped to make the United States play in restoring peace. The public naturally assumed that the President would not let his eagerness to play this historic part make him lend his influence toward precipitating a settlement less favorable to the progress of democracy and the rights of small nations than otherwise might be had, for these are things inherent in American conceptions of civilization—things which we have fought for and which we believe worth fighting for.

The President, however, has gone out of his way from time to time to intimate that in his estimation there is no principle involved in the European struggle that should particularly interest us.

"We must be impartial in thought as well as action."

"With the causes and objects of this Great War we are not concerned."

These and similar statements signify plainly enough that the President does not share in the belief that the war in Europe is a struggle of democracy against autocracy, for certainly if he did believe that to be the character of the struggle he would not suggest that American democracy would be unconcerned about it. These statements of the President's led those Americans who feel that there is a moral issue at stake in Europe to fear his foreign policy. And this fear has been augmented by his willingness to accept a very moderate compliance with our demands on the submarine issue, which has seemed to be influenced by an anxiety to act in the restoration of peace to Europe.

In the Allied countries, of course, the President's seeming negation of their

principal object in the war—the fight for democracy in Europe—has instilled a great deal of suspicion into what would normally have been an entirely friendly attitude. If the President does not appreciate what they are fighting for, they feel that his activities for peace are likely to omit consideration of their most cherished objective and therefore practically amount to aiding Germany.

Against such a background as this the President despatched his note. The occasion of its sending and its contents did nothing to remove the fears which had been growing on both sides of the water.

In our daily discussion of what Europe ought to do, we are apt to forget what Europe thinks we ought to do; and the people who feel so virtuous here because we have kept out of the war have their counterpart abroad in millions of people who pride themselves in being in the war for a just cause.

The following from a British paper, printed before the President's note was sent, is a fair picture of the feeling which our seeming anxiety to hurry peace has aroused in many minds in England and France:

Those American newspapers which are flying a new peace "kite" may be perfectly free from German influences, but they are none the less playing the German game, and it is well they should understand that their efforts can only discredit the United States in the eyes of this country. The mind of the Allies is quite fixed that there can be no safety for Europe so long as a nation of Germany's criminal instincts retains its military power. America has excused her aloofness from the defense of civilization by pleading that she has no concern in the affairs of Europe. Very well—let it stay at that. She will only incur unpleasant consequences by interfering at this stage with the measures which the Allies are taking to put their own side of the world in order.

Mr. Lloyd George some months ago in an interview expressed the same idea, though naturally not with any threat attached to it. But despite the knowledge that the note would be unwelcome in England and France it was sent.

And it was unwelcome on its receipt. Practically the entire British press deplored the sending of the note for it seemed to be merely another instance of a dis-

regard of the moral issue which they considered paramount.

Such comments as the following from the London press give an indication of its reception. The London *Times* said:

Surprise, we should imagine, will be the predominant feeling caused in this country by Mr. Wilson's unexpected step—a surprise which will be intensified by the contrast between the state of mind reflected in his note and the chorus of approbation with which only yesterday the chief organs of American opinion were hailing Mr. Lloyd George's rejection of the German "peace proposals." The striking difference between them cannot but suggest that in thus supporting the German scheme Mr. Wilson may have failed to gauge the trend of all the best American opinion. His offer to take the initiative himself may perhaps reflect inappropriate reminiscences of the part which, under wholly different conditions, President Roosevelt played in the negotiations for the Treaty of Portsmouth. The American newspapers gave a whole-hearted approval to Mr. Lloyd George's description of the conflicting objects pursued by the two groups of belligerents. Mr. Wilson, by some curious process of thought, has reached the conclusion that they are "virtually the same." His development of this theme is more astonishing still.

Each side, he says, desires to make the rights and privileges of weak peoples and small states as secure as those of the greatest nations. The present plight of Belgium—whose starving people are living on American alms—of Poland, and of Serbia, is difficult to reconcile with this confiding trust in German "scraps of paper." But Mr. Wilson does not intimate any doubt as to the possibility of rearing a universal millennium of peace and good-will upon this precarious foundation."

The *Daily Chronicle* was more outspoken:

As a Liberal newspaper, which has always made a special feature of endeavoring to bring Britain and America more closely together, and has through evil report as well as good consistently championed the progressive ideals of the United States in this country, we may ask our friends across the Atlantic to believe us when we say that no American State-paper within our generation has been calculated to cause so much pain not merely to Englishmen but to Liberal opinion throughout Western and Southern Europe as the note from President Wilson communicated to our Foreign Office on December 20. The note is in its effect, however differ-

ent be its intention, an appendix to that lately received from Berlin. Mr. Wilson, doubtless in entire good faith, disclaims any association between them. He is "much embarrassed to offer" his suggestion "at this particular time"; he only does so because "it also concerns the question of peace, and may best be considered in connection with other proposals which have the same end in view." We should have thought that nothing could have been more unfortunate for a bona-fide proposal than for it to be put forward side by side with one obviously mala-fide. The President himself asks that it may be considered "as if it had been put forward in other circumstances." Why did he not choose other circumstances in which to make it?

The President bases his intervention on grounds which, when analyzed, resolve themselves to two—the ground of humanity and that of the injury indirectly done by the war to the United States. In regard to the first, we are bound to observe that, with only one exception (and that a very recent one, on which the enemy have so far flouted his remonstrance—the matter of the Belgian slave-raids) he has never, in face of unparalleled openings, intervened on the ground of humanity before. He was silent when Belgium, an entirely innocent neutral, was treacherously and ruthlessly attacked. He remained silent when her homes were burned, her civilians butchered, her women violated, and the survivors subjected to crushing and wholly illegal requisitions. He said nothing about the sack of Louvain and Termonde, or of scores of other places; the wanton destruction of the unique monument of French history and art at Rheims; the baby-killing at Whitby and Scarborough; or the midnight murders of the Zeppelins. He held his peace when more than half a million Armenians, men, women and children, were massacred with fiendish barbarity by Germany's servants and agents in Asia Minor. The exact line which he drew between issues that warranted intervention and those that did not was perhaps most clearly shown in the case of the submarine atrocities. He was silent about the *Falaba* tragedy, where the victims who were jeered by their German murderers as they drowned in the water were not American citizens. He protested against the *Lusitania*, the *Ancona*, and the *Sussex* massacres, not because they were inhumane but because American citizens perished by their inhumanity. With this line—that humanity did not warrant intervention, but American interests did—we have never quarreled. It was intelligible, and there were precedents for it. But since he omitted to in-

intervene to stop crime is it consistent that he should intervene now to hinder others from punishing the criminals?

These comments are a fair criterion, although there were not lacking such bitter remarks as the *Daily Graphic* printed under the heading, "Another Note From President Wilson:"

The note which President Wilson has communicated to the belligerent Powers shows that between the mind of Europe and the mind of the ruling party in the United States there is a gulf as deep as the ocean that separates the two continents. During the past two and a half years we have been puzzled at Mr. Wilson's phases; his present utterance explains them. "Ignorance, sir, sheer ignorance," as Dr. Johnson confessed in explanation of a blunder that he had made. In this note President Wilson has demonstrated that he has never even begun to understand the causes of the present war or the forces that prolong it. Some of the sentences in this verbose document leave one fairly gasping. The head of the greatest neutral State in the world coolly says that "each side desires to make . . . small States secure against aggression." Has he never heard how war was forced on Serbia, how Belgian neutrality was violated in defiance of specific treaties? He goes on to declare that the United States is keenly interested in the protection of the smaller and weaker peoples of the world. Yet when the Belgians sent a deputation to Washington at the beginning of the war President Wilson refused to lift a finger on their behalf, or even to make a verbal protest against the wrong that had been done to them. . . .

This state of mind prevailed in England and also in France until the publication of the Allies' answer to the President.

In that note the Allied governments took occasion to protest against the President's coupling their expressed aims with those expressed by the German Government. They again reiterated that their main object was to liberate Europe from the brutal covetousness of Prussian militarism, and they outlined the general measures necessary to do this:

1. The expulsion from Europe of the Ottoman Empire. This means the end of the Pan-German plan of a German control of Turkey.

2. The liberation of Italians, of Slavs,

of Rumanians, and of Tcheco-Slovagues from foreign domination. This, with the rehabilitation of Serbia, Montenegro, and Rumania, as M. André Chéradame has pointed out in detail in, "The Pan-German Plot Unmasked," would completely block the German use of Austria-Hungary to control the Balkans.

3. The evacuation by the Germans of Belgium, and the parts of Russia and France they now hold as well as "the restitution of provinces or territories wrested in the past from the Allies." These unquestionably include Alsace-Lorraine and the Trentino. And the Allies show a belief in the principle of the freedom of nationalities by endorsing jointly the Russian promise of an autonomous Poland.

These terms indicate that the Allies not only realize completely the German schemes of conquest in Belgium and Poland but also the plans of absorption of Austria-Hungary, the Balkans, and Turkey. The note also shows that they believe that a German Central Europe from Hamburg to Bagdad, organized under the Prussian system for war, would mean the end of all other nations and that they are prepared to see that this German vision is not realized.

When the President, at Charlotte, N. C., last summer said that the war was due to a clash of national standards, traditions, and policies, he was right; but when he added that "those are things which in contact with each other do not make much progress. When you cannot overcome you must take counsel," he seemed to be suggesting a compromise which to the Allies means extinction.

It was the fear that his note was dictated by the idea that the war was a drawn struggle which should stop on any available terms that gave the President's note its bad reception.

But when the Allies' note reiterated their position and their statement was almost universally applauded in the United States, the feeling against us in large measure died down in England and France.

But the incident is enough to show that the Allies mean to prosecute the war to victory, that they believe that victory is in

sight, and that any moves to bring peace before that time by the United States will tend to alienate the friendship of the European peoples whose ideals and interests most nearly approximate our own.

And if peace should be brought about with the Prussian group and its ideas still in control of Germany and Germany in control of Austria-Hungary, Bulgaria, and Turkey as it is now, the existence of democracy in Europe would be in extreme and constant jeopardy. A dominant Germany in Central Europe would mean the end of all conceptions of leagues to enforce peace and of the building up of international relations on any other basis than force.

THE BUSINESS MANAGEMENT OF WAR

TO AMERICANS, probably the most interesting aspect of the new British Cabinet is the extent to which the industrial and commercial life of Great Britain has contributed to its membership. The mere fact that Mr. Lloyd George, the man who has spent a lifetime outraging the upper social classes of England, now directs the Empire's fortunes in itself evidences the stage of democracy which England has reached. But consider the origin of his most conspicuous associates. Mr. Bonar Law made a success as an iron merchant before he entered Parliament. Mr. Arthur Henderson started life as an iron moulder. Mr. David A. Thomas, now Baron Rhondda, was known, before the war, as "the coal king." Sir Albert Stanley, who is general manager of the London underground, received his education in American technical schools and for years was associated with the Public Service Corporation of New Jersey. Mr. John Hodge is secretary of the Steel Smelting Association, and Baron Devonport, the new food controller, was formerly a large tea importer. Sir Joseph Paton Maclay is a ship owner and Sir Alfred M. Mond has spent a lifetime in power and gas enterprises.

The list is eloquent testimony of the extent of England's democratization and

also of the extent to which the conduct of war has become an industrial problem. War, perhaps more than any crisis in the life of a nation, has a settling tendency; under these trying conditions the real forces that make a people great gradually ascend to their predestined leadership. Should the United States find itself in a similar situation we, too, should recruit the ability to meet the situation. It would seem the part of wisdom to recruit the best talent available to make preparation against the possibility of such a crisis in our affairs.

There is no reason now why the President should not do what has been done in England and France—dismiss all considerations of party and prejudice and place the preparation of the defense of the Nation in the hands of men whose demonstrated capacity in practical fields gives every assurance of success.

Democracies are said to be weak in waging war, and autocracies apparently show to best advantage in this, their favorite trade. This generalization, however, is true only as applied to the early stage of the war. The best men may be slow in coming to the front, but, when once arrived, they will handle this problem with all their accustomed virility. America could demonstrate that the usual unpreparedness is not necessarily an attribute of democracies. The nation that built the Panama Canal and the world's greatest railroads ought to be able to show an industrial organization for the production of war munitions that would give weight to its efforts for civilized peace.

THE REAL REASON FOR UNIVERSAL TRAINING

THE extent to which sentiment is developing in favor of universal military training merely indicates the extent to which the European War has impressed the American imagination. It hardly needed the report of the Chief of Staff of the Army, Major-General Scott, reinforced by his testimony before the Military Affairs Committee of the Senate, to give this subject the large space it has been claiming in the public prints.

Four years ago any American who suggested this idea was completely ignored. Even a year after the outbreak of the present war the universal system seemed foreign to American necessities and ideals. But most Americans have been doing much thinking recently. Many of the wisest leaders of public thought—none of whom have the reputation of being militaristic—have spoken out for universal training. Most of our influential newspapers, as well as our most widely read reviews and magazines, are advocating this great change in our establishment. Practically the only people who oppose it are those who fight any extension of our naval and military organization. Their chief ally is the inertia which the Administration at Washington puts in the way of all national defense measures.

However, there is a genuine and growing public sentiment in favor of universal service which will sooner or later force the Government to act. The change in public attitude is, after all, one of the healthiest manifestations of the American spirit. For, besides the purely military necessity of it, it has another equally valuable attribute. Great as would be the blessings of universal training in protecting that great treasure house, material and spiritual, which is America, the effect of universal service in making us a nation would be at least as valuable. We all feel the need of positive influences that will make us think, more and more, of the Nation as a whole. We are manifesting some enthusiasm for nationalism—of devotion to the Nation whose capitol is at Washington. In the last session of Congress the old disintegrating spirit of localism triumphed, the military bill being its perfect and ultimate flower. But the very fact that the champions of the parishes triumphed so completely has opened the eyes of the public to its ultimate significance; that these forces carried their ideas to such a degree that they imperilled the military safety of the Nation has riveted attention upon the issue. What single influence would destroy this parochial spirit so successfully and transform so completely millions of young Californians and Missourians and South Carolinians

and New Yorkers into upstanding Americans as a citizen reserve army made up of rich and poor, educated and uneducated, all under the control of the supreme authority at Washington? Such an army could adequately defend us against any exterior enemies; even more successfully could it defend us against certain corroding influences at home, of which this lack of a nationalist spirit is one of the worst.

Here, then, is the main argument for the universal system. If the Administration's leadership is the kind that waits until public opinion is sufficiently strong to force its desires, as it was in the increase in the Navy, there may be some unnecessary delay in putting this proper attribute of citizenship into practice. If the Administration's leadership is of a more positive kind, it can come very quickly.

RETAIL PROSPERITY IN 1916

FOR several years the Research Committee of the Associated Advertising Clubs of the World has directed a yearly census of business conditions. Facts are gathered from retail merchants in all parts of the country simultaneously on one day in December by members of the clubs in practically all the important cities and towns. Six lines of business are covered—department stores, grocery stores, clothing stores, hardware stores, drug stores, and jewelry stores. Data is gathered on their sales, advertising expense, stocks of goods, collections, and profits for the month of November.

The last report is now published. It represents the work of 1,700 men who gathered the facts. And it shows that the prosperity of 1916 was felt all over the country. Sales were, on the average, 20 per cent. greater in 1916 than they were in 1915, and average profits were nearly 10 per cent. greater. Jewelry stores made the greatest increase in percentage of sales (22 per cent.) and clothing stores the greatest increase in percentage of profits (14 per cent.). An analysis of the sales has been made by Federal Reserve Districts, and the following percentage of increase gives an idea of the degree to which the purchasing power of the public

has been increased in the various sections of the country: Boston district, 17; New York district, 24; Philadelphia district, 25; Cleveland, 25; Richmond, 16; Atlanta, 21; Chicago, 18; St. Louis, 18; Minneapolis, 20; Kansas City, 17; Dallas, 27; and San Francisco, 20.

THE GROWTH OF ANTI-PORK SENTIMENT

THE public awakening on the subject of the pork barrel is one of the most cheerful and noticeable facts in our politics. For the last seven years the *WORLD'S WORK* has carried on an almost continuous campaign against this evil and has therefore had particular opportunities for watching the growth of sentiment against this form of waste and corruption. The general tone of comment seven years ago was something like this: "Yes, it is bad, but it's hardly worth talking about for it can't be cured." For a week or two before these scandalous bills would come up for the President's signature there would be some newspaper activity urging him to veto them. But when they were not vetoed the public seemingly acquiesced in the inevitable.

But each year the acquiescence came with less ease and grace. The protests grew louder and louder, until now there is enough public sentiment—active, informed, vocal sentiment—to put the pork mongers very much on the defensive and to mar seriously the moral record of any President who endorses their stealing. Moreover, both in Congress and in administrative circles the enemies of the pork barrel have become stronger. A few years ago Senator Burton's lone voice cried in the wilderness of waste against the river and harbor bill, and before that Senator Carter once talked a pork bill to death, but there was no such consistent and regular opponent of the evil as Representative Frear is to-day. Nor in the past have many department officials kept up as steady a campaign against pork as Secretary McAdoo and Assistant Secretary of the Treasury Byron R. Newton are doing now.

In the growing animosity toward the pork habit there has been a disposition to

demonstrate that it is a particular attribute of the South. Unfortunately, the evil is not restricted to any one section. There are breakwaters in Connecticut quite as inexcusable as any river improvements in the South, and perhaps the most ridiculous public building projects are in the West. If the thing is to be killed it must be killed all over. An effort to stamp it out in one place while letting it grow elsewhere will only result in its virulent revival.

CITIES GOING DRY

IT USED to be the fashion, in discussing prohibition, to insist that it was almost exclusively a rural problem. The anti-saloon philosophy, it was urged, succeeded fairly well in country communities, where the population was small and where sumptuary laws are most easily enforced. Even as late as two years ago the facts, as they had accumulated up to that time, sustained this interpretation. There were then practically no large cities that had voluntarily accepted prohibition. Such cities as were dry were usually in this condition only because they were situated in states that had state-wide prohibition. In most cases these cities had voted against the prohibition law at the time the decisive election had been held; in practically all such cases the rural sections had outvoted them and thus had forced prohibition upon them against their will.

But a careful scrutiny of the November election returns, as they affect the prohibition issue, shows that this situation is changing. The cities are no longer unanimous against prohibition. In many cases urban voters are accepting the new status voluntarily. The development is even more remarkable in that these cities are adopting it not as an experiment but after what seems a reasonable trial. In all cases they are cities that had prohibition rammed down their throats two years ago. They voted against it in 1914; but the rural sections outvoted them and made certain states, including all cities therein, dry as a bone. The cities then acquiesced with a bad grace and with many references to personal liberty and "hayseedism."

In these states the prohibition plank, owing to the activity of the liquor interests, was re-submitted in November, 1916. And now we find the cities, after two years of trial, voting for prohibition.

Here is Portland, Ore., practically co-terminus with Multnomah County. In 1914 this county voted against prohibition. This year it voted for it by 2,200. Denver, Colo., voted against prohibition in 1914. This year the city voted dry by 19,000. Tacoma, Wash., went wet by 2,300 when the state of Washington went dry in 1914. Last election Tacoma went dry by 10,000. Spokane went wet in 1914, but now it goes dry by 12,000. Seattle, certainly not a Puritan city, was wet by 15,000 in 1914. Now, after two years of enforced prohibition, it accepts the new order by a 20,000 majority. And now we find Kansas City, Mo., voting for prohibition, and Detroit, a city of 750,000, splitting just about even on this issue. The recent decision of the United States Supreme Court upholding the constitutionality and validity of the Webb-Kenyon law prevents the shipment of liquor from wet to dry states and thus further insures that dry cities shall in reality be dry.

A FINAL BLOW AT TAMMANY HALL

ONE of the most important political events in this country, now that the Presidential election has been decided, is the approaching mayoralty campaign in New York next fall. The whole Nation has an interest in the New York City election which it feels in no other municipal contest. This is not only because New York is our largest city—it has a population greater than that of every state in the Union but three—but because it has for a generation symbolized all that is worst and also all that is best in American local government. When Mr. Bryce, twenty-five years ago, pronounced municipal government as the one conspicuous failure of the American democracy, he did so after minutely describing the history of Tammany Hall, and particularly the American metropolis under the Tweed régime. Tammany, indeed, enjoys a peculiar infamy all over

the United States and the world; in sections where the name of "Abe" Ruef and the glorified grafters of other American cities, many of them as bad as Tweed and possibly even worse, have never penetrated, Tammany stands as the symbol of the unspeakable in municipal government. Probably no news would so cheer the workers for better conditions everywhere as the news that Tammany has been overthrown, not temporarily, but permanently.

That is the reason why this coming election possesses such widespread importance. The reelection of Mayor Mitchel would mean the end of the Tammany organization as a dominant force. That den of thieves has been deprived of power so long that it could hardly survive another four years' exile. Most people outside New York regard Tammany as still a virile element in the city's politics; they do not understand that this once voracious monster is already moribund. Tammany lost its grip upon the city as far back as 1901—sixteen years ago; for it has never absolutely controlled New York since the evil days of Van Wyck. Now and then it has elected an officer, but it has never possessed a mayor or entirely dominated New York politics. The one individual who has done most to give this ancient organization its mortal stroke is the present head of the city government, John Purroy Mitchel, who has furnished New York an administration, in the last three years, that will serve as a model to scores of other American cities that are struggling for freedom.

Mr. Mitchel is doubtless an ambitious young man, but probably no title to fame would gratify him more than the reputation of having been the man who destroyed Tammany. The recent election augurs well for his success. In New York County—Manhattan Island, the stronghold of Tammany—Mr. Wilson obtained a majority of 100,000 over Mr. Taft in 1912. Last November, although Tammany put forth its best interests in his behalf, the Democratic candidate obtained only 40,000 majority. These figures mean one thing only, and that is the ebbing power of Tammany Hall. One more body blow next fall—and who so competent to give it as Mr. Mitchel?—and the foul thing is dead.

I. WHY THE ALLIES EXPECT TO WIN NIVELLE AND HIS METHOD OF TAKING TRENCHES

BY
THE EDITOR

BETWEEN the capture of Douaumont and the further French success at Verdun on December 15th last I had the good fortune to meet General Nivelle. Under the guidance of Lieutenant d'Adigny, Mr. Grégoire Alexinsky, a former member of the Duma and the author of "Russia and The Great War," Mr. H. C. Prothero, the editor of the *Quarterly Review*, Mr. E. Alexander Powell, and I motored to the headquarters of the Second Army. Like so many other places the headquarters are somewhere in France. Almost every one in France knows where they are and unquestionably almost every one in the Crown Prince's army knows as well, but on the bare chance that the Germans do not know their whereabouts, it is not printed. The general has an office on the second floor of a good sized house. Despite the fact that the headquarters rather dominates its surroundings you could pass it easily without getting any idea that anything in particular was going on inside. There was a sentry in front of the house, but sentries are common enough not to attract attention. The wind was blowing toward the lines, so we could not hear the guns, and there was no particular stir around the building. There were no dashing orderlies or dispatch riders. There may be on crucial days, but certainly not in the ordinary courses of events. The German prisoners breaking stone in the yard and the French soldiers loafing around two or three little stores gave a martial but not very active appearance to the headquarters.

We went inside and up stairs and along a bare hall. The Lieutenant knocked on the door, and as we went in the General got up from behind a big table at the other end of the room. He greeted us pleasantly, asked where we had been, where we were

going, what we had seen, etc. The conversation (which was not long) proceeded as if our whereabouts and observations were of importance, which is true hospitality and pleases every one, but it was not calculated to give us a profound insight into the General's theory of war. It was not a foil against questions, but just what it seemed, good manners.

But in the few minutes we talked with the General one could not help getting a certain impression of the man from his looks. He is a clean-cut, trim figure of medium height. Like most of the French officers he looks well in the light blue uniform. Physically he appeared healthy and vigorous. He seemed to be anywhere from fifty to fifty-five. He impresses you as a man who has not lost vitality in gaining experience—an intelligent man of affairs. There is nothing of the bulldog characteristics of Von Hindenburg's face. If he were to sit down next to you in a Pullman smoker in civilian clothes you would naturally expect that what he would say would be worth while. He has that appearance. You would not be surprised if he turned out to be a man of great success or a man of moderate success. But less than this would be a surprise. His face shows competence and confidence, but it is not as unusual a type as Joffre's, for example. This was what I put down in my note book that night when there was no temptation to read his future greatness into his looks, for when I saw him I did not realize the real significance of the recapture of Douaumont and had no idea that he was destined to become the active Commander-in-Chief within two months. He appeared a pleasant, intellectual, successful man of responsibility. Since coming back to America I have found out that he is sixty years old instead of from fifty to fifty-five as I thought, and that up to the beginning

of the war he had been only moderately successful, being then a colonel, commanding the Fifth Regiment of Artillery and about to be retired.

He was promoted to General of Brigade on October 24, 1914, and soon after placed in command of a division. On December 13, 1915, he was given command of an army corps.

"THE FRIEND OF INVENTORS"

In the fragmentary bits of information about him which have come through our papers there is one that corresponds particularly with the conception I got of the General from officers around Verdun. It is from the *New York Times*:

Nivelle is the friend of inventors. Let one get a pass to his headquarters and he receives the most assiduous attention, particularly if he has brought a product of his work with him. On this point a French visitor has written thus:

"In General Nivelle's sections all the newest scientific inventions were welcome, and put to a thorough test. I was present when he presided over the trial of a new device for trench artillery, specially designed to annoy the Boches."

The officers I talked to made it plain that the General and the staff of the Second Army conceived of the successful conduct of war as necessarily a succession of improvements, in material and technique. A staff captain remarked that the Douaumont success made certain things about the fighting on the Somme obsolete and that in another six months it, too, would be surpassed. The only fixed thing in their conception of warfare was the fixed habit of improving it. Most of the generals in the different armies believe this in varying degrees, but they are exceptional ones who can carry on their regular work and still have the imagination and vitality to invent improvements and stimulate their subordinates into the realization that only by doing more than their allotted tasks can they achieve real success.

It was the practice of this theory of constant improvement which made Nivelle the successor to Joffre.

On Friday, the 15th of December, the Second Army, under General Nivelle, followed up its sensational recapture of Douaumont by another advance north of

Verdun in which it captured between 11,000 and 12,000 Germans, and certainly killed and wounded more than that many more, and suffered themselves approximately 14,000 casualties.

THE METHOD HE DISCOVERED

On the Monday following, General Nivelle left Verdun to take command of all the armies of France. In taking leave of his staff he said:

The test is conclusive; our method has proved sound. Once more the Second Army has just asserted, in the highest degree, its moral and material ascendancy over the enemy. Victory is certain. I give you assurance. Germany will learn it to her cost.

This statement is not the usual general's congratulations to his troops. It has something of the significance a statement from Ericsson would have had if he had announced the discovery of a method for keeping the command of the sea when he sent the *Monitor* to Hampton Roads.

It was not merely General Nivelle's success at Verdun but the method he perfected to achieve success which raised him to the command of the French armies.

If we go back and look at the course of the trench warfare on the western front, the importance of General Nivelle's discovery becomes clearer.

In the fall of 1914 the trench lines in France and Belgium were established very nearly as they are now. For years it has been a military axiom that frontal attacks on entrenched positions could not succeed even with greatly superior numbers on the attacking side. If this axiom held, the Allies could not hope to drive the Germans out of France. On the other hand, the Germans could not hope to gain a decisive victory on the western front. Both sides began experimenting to find a method of attack that would prove superior to the trench defense. From the middle of October until well into November, 1914, the Germans in greatly superior numbers tried hard to break through the Allied line from the Somme to the sea. The British estimate that this attempt cost the Germans five men to the Allies' two. Again, in May, 1915, the Germans launched a heavy attack against the British lines northeast of

Ypres. The Germans were better equipped with artillery, machine guns, bombs, and in fact in almost every way than their adversaries. Despite the initial success, as an experiment to find a practical offensive against trenches it was a failure. It cost too much in men and the Germans turned their attention to the east and made no further serious effort in the west until February, 1916.

In the meanwhile, however, the Allies made various efforts to discover a way of successfully attacking trenches defended by machine guns and supported by artillery. In May, 1915, the French drove the Germans off the hill of Notre Dame-de-Lorette, in the middle of June they followed this with another attack at Souchez, in the same neighborhood. These attacks improved the position of the French line but they did not show any practical method by which the French could drive the Germans out at a cost they could afford to pay. Nevertheless, in September the French gathered a great number of men and guns in the Champagne and prepared to try to break the German line. Their cavalry was ready to go through if the attempt succeeded. But like its predecessors it gained ground at too high a price. The attackers lost two or three to one of the defenders. The axiom still held good. The British in the meanwhile made several sanguinary and determined efforts to disprove the axiom. Like the Germans and the French, they proved completely that without some other aid pure courage would not do it.

By January 1, 1916, it looked as if the axiom would hold against both sides and that Joffre's nibbling policy and exhaustion were the only hopes for settling the fate of the war on the western front.

In February, however, the Germans tried an improved method at Verdun. Whether they decided that they could not afford to wait for exhaustion in the west as well as the Allies, and therefore they must try again, or whether they were sanguine enough of their new plan of attack to want to try it, makes no particular difference. They concentrated a hitherto unprecedented number of heavy guns—some 2,000—against the French lines north of Verdun. They began a bombardment

which largely destroyed the trenches and practically cut them off from any reinforcements, and then they launched heavy masses of infantry at them. The first few days of the attack on Verdun showed good results. The Germans gained ground and accounted for more of the French than they lost themselves. But after that the gain in ground was very slow and the losses in attack were greater than those of the defenders. The longer it lasted the more costly it became to the attackers in proportion to the cost to the defenders. It became increasingly plain that the German effort did not disprove the axiom, and yet it was the best method worked out up to that time of attacking trench positions. The German losses were certainly not more than three Germans to two French, whereas in all the earlier attacks the losses by the attackers were from two to one to four or five to one greater than those of the defenders. The significant trouble with the German attack at Verdun was that its initial success could not be kept up. As the attack continued the proportion of the attackers' losses grew.

So up to July, 1916, neither side had found a system of offense that would be practical for a sustained effort against trenches.

THE SOMME DRIVE

On the 1st of July the battle of the Somme began. It has lasted well into the winter, with lapses on account of the weather, and it will in all probability continue in the spring.

The Germans say that the English have lost 550,000 and that the French have lost 250,000, or 800,000 altogether. The French estimate of the German losses is 690,000. Or, if we accept these mutually hostile estimates, roughly speaking, the attackers have lost eight men to the defenders' seven. But there is a significant difference between the attackers' losses on the Somme and the losses of the German attacks at Verdun. At Verdun the German proportion of loss was lower in the early part of the attack and grew larger and larger. In the battle of the Somme the attackers' losses were heavier in the earlier stages and grew proportionally less. Prob-

during the entire Somme battle the French had done better than swap man for man. In the beginning the English suffered much more than this, but as they became more skilful their proportion of losses has gone steadily down. For example, the British attacked a certain part of the German line in the early days of the battle, took part of it, and lost it again. The attempt cost 40,000 casualties.

The German defenders did not pay anything like this price. About four months later the British took the same positions and 8,000 prisoners with a casualty list of about 12,000. The total German losses, including killed, wounded, and prisoners, could hardly have been less than twice the British 12,000.

But on the whole, since the first few weeks on the Somme the Allies have carried on their offensive, at most swapping man for man with the Germans.

Then came General Nivelle's two attacks on October 24th and December 15th at Verdun. The French losses in the two attacks were about 25,000 men. The German prisoners alone amounted to 10,000. The method which General Nivelle used at Verdun was a system of attack against trenches in which the attackers lost one man to the defenders' two. This disproves the axiom. The Allied offensive on the Somme was a great improvement on the German offensive at Verdun, and Nivelle's offensive at Verdun was an improvement on the Allied method on the Somme. Just how this offensive worked in the capture of Douaumont is graphically explained elsewhere in this number of the magazine by Mr. Arnold Josch-Fleurot, who went over the shell-orn battlefield with Mr. Wythe Williams of the *New York Times* and Mr. John Bass of the *Chicago Herald*, who were the first civilians to enter retaken Fort Douaumont.

It is true that this offensive method, used in the Somme battle and at Verdun, has restored a hardly appreciable portion of the conquered provinces of France and none of Belgium. But the amount of land gained is not the criterion. The Somme and French offensives at Verdun have accounted for about three quarters of a million Germans [not counting the German

attacks on Verdun] at a price which the Allies could afford to pay. The entire French effort was on a profitable basis, and the later English actions on the Somme were extremely successful. The Germans could stand these casualties again this year, but the possibility which they face is worse than this. During 1916 there were two big battles on the western front of which the French carried on one and half the other. The British carried on the other half of the Somme. But the British have more men than the French, and within the last six months they have for the first time amply equipped them with all the complicated appliances of modern warfare.

When spring opens the Germans face the possibility of not two great battles but of three or four or perhaps more. If from July to December in two battles the Germans have three quarters of a million casualties, have they the men to face the casualties of three or four such battles during the coming year on the western front? And have they or can they get the guns and munitions to support three or four such battles, for if they are lacking in these things their proportion of casualties will be even higher than it has been?

ARTILLERY SUPERIORITY OF THE ALLIES

The foundation of the success of the Allies at Verdun and on the Somme has been their artillery superiority, which necessarily includes control of the air. There are other essential elements, but without artillery superiority they cannot be effective. During all the first part of the war the Germans had more heavy guns than the Allies. This summer the position changed. And both France and England are using every endeavor in their power not only to keep the present superiority but to enlarge it. Their manufacturing facilities plus their access to the markets of the world ought to enable them to achieve their purpose. The Germans, of course, are making every possible effort to regain their lost advantage. One of the reasons for the enslavement of the Belgian workmen is that the Germans want more men to help make the guns and shells to meet the production of the Allies. They know, of course, what they are facing, and this

knowledge is not unconnected with their efforts to negotiate peace separately with Russia, with France, and with England, and, when these efforts failed, with their public peace overtures sent through the neutral countries.

To say, as is often done here, that the Germans are beaten and know that they are beaten, is far from true. They are not beaten and consequently they can't know it. But the Allies have a practical "method" of attack, and they have the guns and munitions to support it, and the

ever-increasing British army affords the men to carry it on. Until the Somme and Verdun, the Germans had not had to face any Allied effort on the western front which seemed to have decisive possibilities. Now they have. Since the Somme the French have confidence in the British army's ability as they have in its courage. They have complete confidence in their own army. They believe in Nivelle and his method. In the words of one of their generals at Verdun they feel they "have the wolf by the ears."

II. WHY THE ALLIES EXPECT TO WIN

LLOYD GEORGE AND THE IMAGINATION TO WIN

BY

THE EDITOR

WHEN Mr. Lloyd George was Minister of Munitions earlier in the war, officials of the War Office came to him with a programme for the manufacture of guns and shells. Mr. Lloyd George accepted the programme and told its makers that he would multiply it by eight. Despite their objections this is just what he did do. Later on he again doubled the programme. Altogether there were actually made sixteen times the number of guns and shells called for in the original order.

The increase was due to Mr. Lloyd George's imagination, and the British success on the Somme itself in turn was due to the increase.

To win in this war England has to think big and decide quickly. No amount of little thinking, no matter how accurate, no amount of wise decisions, if they are belated, will suffice. Lloyd George thinks big. His large head is full of imagination and his little body has lots of courage. He increased the programme of the war officials sixteen times, and he has enlarged the vision of a lot of his countrymen in about the same proportion. His idea is not to let the Germans set the pace but to make more munitions than the Germans

ever thought of and get all the men there are. He means to put England's effort on a plane that no one ever contemplated, least of all the Germans, and if he can do it that is the way to beat the Germans.

To see what Lloyd George wants to speed up it is worth while looking a minute at what England's effort already amounts to. "England's effort" has become a much used phrase. It has an alliterative value but it is far from accurate. England, Scotland, Ireland, the Dominions and colonies are all in it. Nevertheless, the large proportion of the Empire's effort has been furnished by the 46 million people in Great Britain.

Roughly speaking, the effort consists in:

(1) The largest financial contribution of any nation on either side to the war. The British expenditure is the largest of any one government engaged in the war, and despite this the English exchange has fallen only 2½ per cent. (the German decline has been 23 per cent.) With this money the English have paid their own war expenses, helped finance their allies, and incidentally furnished more than half of the money with which the Belgian Relief Commission has fed Belgium.

(2) The maintenance of the largest

avy in the world, augmented during the war by building at a rate at least equal to our proposed naval programme, the maintenance of thousands of patrol boats, mine sweepers, and the greatest merchant fleet afloat for transporting supplies from all the world not only to British ports but allied ports as well.

(3) The organization and training of an army of 6,000,000 and the creation of the necessary guns, munitions, and supplies.

For an appreciable part of this effort of the Empire, Mr. Lloyd George as Chancellor of the Exchequer, as Minister of Munitions, as War Secretary, is responsible. As Prime Minister he wants to enlarge and intensify the Empire's effort and to add firmness and decision to her councils.

AN ABILITY TO GET THINGS DONE

It seems remarkable that one man should be successively an authority on finance, on munition manufactures, and on the conduct of war—especially a man whose previous career has been chiefly taken up with social reform and the limitations of privilege in the Government. The truth is that he is not a great authority on any of these subjects. His specialty is not finance, manufacture, or war. His specialty is getting things done. He has a far-flung imagination, the courage to act on it, the ability to make others carry out his plans, and the power to make the public support him. Even conservatives who, a few years ago, would greet each other with "Good morning, d—n Lloyd George," now gladly testify to his power and willingly accept his leadership. They not only recognize his ability to get things done, but they also realize that the war will do much to change the old order in Britain anyway, and Mr. Lloyd George is no longer the leader of a dangerous tendency which without him might be squashed.

Mr. Lloyd George has not become the traditional type of British statesman. He does not participate in the small circle of the so-called governing class in London. He neither belongs to that class nor does he believe in it.

The traditions of No. 10 Downing Street, the house which the British Government provides its Prime Minister, may

make a change in his habits, although Mr. Lloyd George has changed traditions much more than he has been changed by them; but when I saw him one Sunday afternoon last November he was living in a simple, comfortable little house at Walton Heath, about twenty miles out of London.

Mr. Lloyd George, Mrs. Lloyd George, one of his sons in khaki, and his daughter and another visitor or two sat around in front of a little fire and had tea. The Prime Minister is a man terribly in earnest in his government duties, but he has no furrowed brow and detached air out of hours. The conversation drifted along about various incidents and people in the news of the day. It was a very easy-going conversation in which all present, including the then War Secretary, seemed to say just what occurred to them at the time with about the same abandon that people who have no responsibility for events use, though with less intolerent criticism than is usually the case. Part of the talk was about Ireland, and Mr. Lloyd George contributed a sympathetic Gaelic touch or two about people and events in that island. The forceful and direct turn of phrase which stand out in his public speeches is evidently no special effort, for in his casual conversation it also appears. It seems to be the result of direct and forceful thinking, and his words are merely the expression of that habit. There are those who question Mr. Lloyd George's ability to maintain long a Parliamentary majority. However that may be, there is no question that he, more than any other British statesman, has visualized the size as well as the significance of the war.

When the war broke out the present Prime Minister was The Right Honorable David Lloyd George, Chancellor of the Exchequer, and he was engaged in a campaign of democracy, a campaign to distribute the taxes more equitably, toward increasing the opportunities of advancement for the lower classes in Great Britain, and in curtailing the special privileges of pedigree and wealth in the Government. The English aristocracy was the impediment to democracy and liberty against which he was directing the energies of his exuberant nature. Then suddenly a real enemy to

democracy appeared. Germany suddenly acted on her long-discussed theory that no nation and no people had any rights which Germany was bound to respect except those defended by force, and that there was no God or morals above the German State. The task suddenly shifted from a question of the improvement of British democracy to the existence of it, and the existence of liberal government in the rest of Europe. As Mr. Lloyd George said in his first speech as Premier to Parliament:

The Allies entered into this war to defend Europe against the aggression of Prussian military domination and they must insist that the end is a most complete and effective guarantee against the possibility of that caste ever again disturbing the peace of Europe.

Prussia, since she got into the hands of that caste, has been a bad neighbor—arrogant, threatening, bullying, shifting boundaries at her will, taking one fair field after another from weaker neighbors and adding them to her own dominions, ostentatiously piling up weapons of offense, ready on a moment's notice to be used.

She has always been an unpleasant, disturbing neighbor to us. She got thoroughly on the nerves of Europe, and there was no peace near where she dwelt.

It is difficult for those who were fortunate enough to live thousands of miles away to understand what it has meant to those who lived near. Even here, with the protection of the broad seas between us, we know what a disturbing factor the Prussians were with their constant naval menace. But even we can hardly realize what it has meant to France and Russia. Several times there were threats. There were two of them within the lifetime of this generation which presented an alternative of war or humiliation.

There were many of us who had hoped that internal influences in Germany would have been strong enough to check and ultimately to eliminate this hectoring. All our hopes proved illusory, and now that this great war has been forced by the Prussian military leaders upon France, Russia, Italy, and ourselves, it would be a cruel folly not to see to it that this swash-buckling through the streets of Europe to the disturbance of all harmless and peaceful citizens shall be dealt with now as an offense against the law of nations.

The mere word that led Belgium to her own destruction will not satisfy Europe any more.

We all believed it; we all trusted in it. It gave way at the first pressure of temptation, and Europe has been plunged into this vortex of blood. We will therefore wait until we see what terms and guarantees there are better than those, surer than those, which she lightly broke. Meanwhile we ought to put our trust in an unbroken army rather than in a broken faith.

That is what every Britisher, Canadian, and also a goodly number of Americans in khaki that I saw in the two months I was in Great Britain and France, were fighting for. As many expressed it, the easiest solution would be a revolution in Germany that would cast out the Prussian military government and substitute a democracy for it. But there seem to be no signs of this. All that remains, then, is to defeat the Prussian military caste and all who support it. For, as its promises cannot be trusted, so long as it remains powerful enough to attack its neighbors the peace of Europe is always in jeopardy. And this conception is just as fixed in the mind of France as it is in the mind of Great Britain. There may be other guarantees besides democratization or defeat—the end of the Prussian era in one form or other—but, as the Prime Minister said, what guarantees are there surer than those which Germany broke?

Mr. Lloyd George also spoke of restitution and reparation. In the legal phase these are the costs of the trial by battle between democracy and autocracy. No matter how complete the ultimate Allied victory, the full costs can never be imposed on the guilty party. How much it is possible or wise to impose depends on how complete is the democratization or defeat of the Prussian caste's militaristic government.

Mr. Lloyd George is the champion British democracy not only because he states its case but because, whether democracy is right or wrong, its survival depends on its organizing itself so that it can overcome the attack of an efficient autocracy, and that is Great Britain's task under his leadership. It is fitting that British leadership in this particular trial should be in the hands of the most democratic statesman in Great Britain.

I. WHY THE ALLIES EXPECT TO WIN

BRIAND—THE SINGLE FRONT AND ADEQUATE MUNITIONS

MARISTIDE BRIAND, the war leader of the French nation against Prussian autocracy, like Premier Lloyd George, is not only a democrat but a radical democrat. The war is, therefore, to both countries a test of democracy's efficiency under particularly democratic leaders, as the war is a test of autocracy's morals and humanity under the Prussian military caste.

When the war came M. Briand was Minister of Justice. He remained in this position until October, 1915, when he became Foreign Secretary and Premier. Previously in his career he had not only served as minister of most of the important departments but from 1909 to 1911 and for two months in 1913 he was at the head of the French Government. He was the first Socialist Premier of the Third French Republic. M. Briand's brand of Socialism corresponds roughly to democratic politics in the United States. Similarly, a large part of his support came from the labor party, which is much stronger in France than in America. Soon after his accession to power, the railroad employees on the state railroads struck. Transportation was threatened with paralysis, and the authority of the State was also threatened. M. Briand met this situation completely. He called the men to the colors and ordered them as soldiers to run the trains. To disobey was mutiny. The strike ended. This is M. Briand as a man in action.

His other most salient characteristic is a good nature that enables him to get on with more of the different factions of French politics than do most of his contemporaries. It was this as well as his ability to act that made him the choice for Premier when France wished to forget internal dissensions and devote all her energies to self-defense.

On the other hand, M. Briand's political enemies say that he does not work very hard. The most extreme Parisian gossip

—which the Premier as well as every one else hears—says that he not only does not write his documents but does not even sign them. The most interesting commentary on this gossip is M. Briand's own because it gives a clear picture of his conception of his work.

Not long ago M. Maxime Vuillaume, an old friend of the Premier's newspaper days, was talking to M. Briand, and this is the record of the conversation, which has not hitherto been published.

M. Briand has a method of his own for working. He considers, so he told me, that the country has the right to demand of those to whom it confides its destinies something other than mere material work. Nothing is gained by living in one's ministerial office, assiduously carrying on the daily task, forehead perpetually bent over one's files, like an ox at work. That is the business of the staff around him.

Like most men of large affairs the Premier does not actually write much with his own hand. When he addresses a circular to his diplomatic agents or a wire to one of his colleagues of the Allied countries, he calls upon the competent head of the department, and dictates rapidly the idea which is to be embodied in it. After having verified by a careful perusal that his thought has been faithfully translated, he has only to add his signature. He signs all the documents, without exception, which pass before his eyes. Those of little importance, he authenticates by his initials. The important documents have his signature clearly written, *Ari Briand*.

M. Briand gives the impression of being a particularly thoughtful man. *Il Pensieroso* ("The Thoughtful"), an Italian official remarked when he saw him in Rome in 1916. But that, however, is not a complete description.

"I am," M. Briand said, "a man of reflection and realization."

His realizations in this war are the things which make him interesting at present.

They are, in short:

The formation of the Ministry of National Defense, founded on the truce of all parties, a conception likely to last through the war whether M. Briand heads the French Government or not,

The formula of "a single front," meaning common action and coördination between the Allies. •

The sending of the force to Saloniki, the outward sign of France's determination to reconstitute Serbia and to prevent Germany from practically annexing the Balkan States.

The ever-increasing supply of guns and ammunitions for the armies.

At the end of October, 1915, when he took command of the Government, M. Briand achieved the "realization" of his plan for a party truce and a Government carried on with the undisputed help of all parties. He gave his Government a new strength by adding to it men taken from the most opposed camps, but all devoted above everything to the work of the national defense.

With his administration thus strengthened M. Briand immediately proceeded toward the realization of his plan for a single front. He knew what was necessary to do first of all, if France wished to win. Until then, each of the allies of the Entente had valiantly fought on its own front, with very little coöperation. The Germans, on the other hand, favored by the interior lines and the organization of all their allies, made each plan fit in with every other. To meet this the Allies would also have to act together. It was indispensable to coördinate their efforts and to pursue them only in the general interest. For that, unity of action was necessary. There must not be several fronts, but a single front, a single battle, a single plan. That was the origin of the Conference of the Allies, preceded a month earlier by M. Briand's preparatory journey to Rome. The closer coöperation of the Allies does not, of course, eliminate the German advantage of interior lines. It does offset their unified control of all the armies fighting on their side.

France and her Allies owe to the initiative of M. Briand that which has been justly called, "the single battle on the

single front." She is still indebted to him for not having abandoned Saloniki to the Central Empires. The expedition to the Dardanelles had had a somewhat disastrous result. The road to Constantinople by the straits was closed. Was Germany to be left to realize her Eastern dreams, by establishing the famous Hamburg-Constantinople-Bagdad railroad? Was she to be left mistress in the Orient, to attack India and Egypt? She had dreamed of that. M. Briand thought, in order to combat her plans, of installing the French army in Saloniki with its continuing threat against the Central Powers in the Balkans. He did not realize this plan without rough opposition. It was represented that the enemy was still about fifty miles from Paris and that it was madness to go and fight in the Balkans when the French front was menaced. But M. Briand held firm, and the force is at Saloniki and has retaken Monastir. It has not cut the Constantinople line, nor was it able to save Rumania, though it did keep a goodly force of Germans and Bulgars away from Rumania. But while it remains, Greece cannot join the Teutonic forces and the threat on the Constantinople line continues to be present.

THE MUNITIONS PROBLEM

But the most vital problem before France in the last year and a half has been that of guns and shells. The previous Government had worked hard on this and M. Briand has continued and increased the efforts. M. Albert Thomas, Under-Secretary of State for Munitions, one of the men of notable ability shown by the war, had since May, 1915, been extraordinarily successful in his production. But it was necessary to make still more, and the Briand Government continued and encouraged M. Thomas in his work.

Shells are to-day turned out by millions in innumerable factories—many of them built since the war. A single figure will indicate at its true value the size of the task accomplished by M. Briand's Government. In August, 1916—they are the most recent statistics—not less than 7 millions of shells of all calibres were turned out by the factories: 230,000 a day. The

reserve includes an enormous quantity of projectiles which it would be indiscreet to disclose here. All that can be said is that this reserve is generous enough to be drawn upon largely. This is more comprehensible when set down in conjunction with the fact that on the Somme front the two Allied armies used, in eighty days' fighting, 12 to 15 millions of artillery shells, without counting the trench mortar shells and the various other projectiles.

That is an average for both armies on the Somme of from 150,000 to 200,000 shells a day. The French have been making 230,000 a day and the output is increasing. And in guns the Allies have now acquired a definite superiority. The French now have added 400-millimetre cannons, which fire 1,000 kilograms of metal, and great numbers of the 380, the 305, the 280, the 220, and the 155 to their large supplies of the 75. In a recent declaration, M. Albert Thomas stated, with legitimate pride, that he had trebled the figures which were asked of him in June, 1915, for the single shell of 155 millimetres, one of those of which the consumption is particularly large. He added that he did not despair of increasing it fivefold. The Somme and Verdun battles are the proof

that France has guns and ammunition.

And munitions are the necessary means of the method of victory which General Nivelle worked out at Verdun and which, as active chief of the French armies, he will have an opportunity to try on a larger scale. And, after all, the one great task of the French Government is to turn all the energies of the people in effective form toward the firing line until the Germans are beaten and France is freed.

"PEACE THROUGH VICTORY"

"The task which remains for us to carry out is hard," said M. Briand in his speech of September 14th in the Chamber of Deputies. "However heavy it may be, we know how to bring it to a happy ending by the association of our efforts and by the coöperation of all the good-will in which France is so rich. The union of all the live forces of the country is the essential condition of success. It is that which will lead us to the end: peace through victory, a solid and lasting peace guaranteed against every violence by international sanctions."

That is the French feeling. They are prepared for any sacrifice rather than live again alongside a powerful Germany ruled by the Prussian military caste.

*L'union de tous les jours vis-à-vis
du pays est la condition inséparable
du succès. C'est ce qui nous mène
au but: la paix par la victoire, une
paix solide et durable, garantie contre
toute retour de violence par des sanctions
internationales appropriées.*

Ari Briand

THE SIGNATURE OF THE FRENCH PREMIER

The Premier does not actually write much with his own hand. Important documents have his signature clearly written, Ari Briand

INVESTMENTS AND PEACE

Every month the *WORLD'S WORK* publishes in this part of the magazine an article on experiences with investments and lessons to be drawn therefrom.

LAST October, in urging the need for careful guidance in the buying of corporation stocks, especially among people who were deficient in knowledge of the formulas for determining genuine investment values, the *WORLD'S WORK* made this suggestion:

That the opportunities for investment in stocks might better be sought, if sought at all, "among the seasoned, dividend-paying issues, preferably those which are exciting no speculative delirium, but which offer solid yields of income for the simple reason that they happen to be passing through a period of market neglect."

To this suggestion there was an immediate and gratifying response from correspondents of the magazine. In fact, letters continue to come from prospective investors, expressing the desire to know something about "the why and the wherefore" of the suggestion as applied to stocks in the field of legitimate business; and to be supplied with concrete examples of the kind of issues alluded to.

Recent stock market history has furnished an abundance of experience, which may be summarized in an article as an illuminating reply to these letters.

To begin with, let us take a part of the record of transactions on the New York Stock Exchange during the week ended December 16th last. The table on this page shows the net changes during that week in the prices of all stocks in which the transactions (in shares) ran into six figures, indicating extraordinary activity.

Admitting that there is not a stock mentioned therein but possesses intrinsic merit in some degree, it would be difficult, nevertheless, to make a selection of listed issues more typical of the general class that had been recklessly exploited for months on the basis of war-time profits. Excepting the three railroad issues in the table, these stocks are, in fact, among the

best examples of those in connection with which the question of discrepancy between actual value and current market price had come to be regarded with astonishing indifference.

Nor did it remain for the readjustments which disinterested observers had repeatedly warned must sometime become imperatively necessary—the readjustments in American industry from a war to a peace basis—actually to get under way to reveal the consequences of such indifference. Germany's unexpected proposal to discuss peace, even if difficult to interpret as pointing the way to the attainment of its ostensible object in the immediate future, served as a stern reminder of the foolhardiness of continuing indefinitely to appraise stock values in terms of war. What followed, the table suggests, although it does not show the limits of the violent declines among the industrial shares which

	NO. OF SHARES SOLD	NET CHANGE
American Smelting. . .	220,300	Decline 5
Anaconda Copper . . .	429,100	" 9½
Baldwin Locomotive com.	116,700	" 2½
Central Leather com. Chile Copper . . .	262,100	" 13
135,600	" 1	
Corn Products com. .	112,100	" 3½
Crucible Steel com. .	179,600	" 16½
Cuba Cane Sugar com. Inspiration Copper. .	154,850	" 10½
177,600	" 8½	
Internat'l Mer. Ma- rine com.	160,200	" 10½
Internat'l Mer. Ma- rine pfd.	221,100	" 13½
Internat'l Paper com. Kennecott Copper . .	103,900	" 19
255,100	" 6½	
Lackawanna Steel . .	112,200	" 10
Reading common . .	172,506	" 1
Republic Iron & Steel com.	252,600	" 6½
Southern Railway com. Union Pacific com. .	239,100	Increase 5½
113,400	" 1½	
U. S. Industrial Alcohol com.	141,500	Decline 29½
U. S. Steel com. . . .	2,457,450	" 12½
Utah Copper	226,100	" 10
Westinghouse com. .	103,100	" 5½

accompanied the first impulsive attempts at reappraisal.

For the concrete examples of the kind of stocks whose investment qualities are, as a rule, emphasized under conditions like those referred to by the very manner in which they resist being drawn into the vortex of speculation, consider another part of the record of transactions on the Stock Exchange during the week ended December 16th. Here is a table showing the net changes during that week in the prices of a dozen of the higher-grade railroad stocks, in only three of which did the transactions (in shares) run into five figures. The table also shows the income yields of these stocks at present prices, and for more serviceable comparison the averages of their highest and lowest prices during the last five years:

	NO. OF SHARES SOLD	PRESENT PRICE	APPROXIMATE YIELD	FLUCTUATION, WEEK ENDING DECEMBER 16TH	FIVE- YEAR AVERAGE
Atchafalpa pfd.	3,400	100½	4.98		100½
Balt. & Ohio pfd.	1,900	74	5.35	Decline	79
St. Paul pfd.	700	124½	5.60	"	133
Northwestern pfd.	200	176	4.60	Increase	180
Great Nor. pfd.	5,900	117	5.96	Decline	127
Norfolk & West. pfd.	500	85½	4.70	"	86½
Union Pac. pfd.	1,640	83½	4.80	Increase	87
Pennsylvania	27,100	112½	5.33	Decline	114
Louisville & Nashville	600	132	5.28	"	137
Northern Pacific	16,500	110	6.36	Decline	114
Delaware & Hudson	700	149½	6.00	"	157
Southern Pacific	36,100	95½	6.05	"	98½

There are few circumstances in which securities of the general class represented by these stocks may not properly be called to the attention of bona fide investors who aim to escape the uncertainties and vicissitudes of industrial and commercial fortune, but who find occasion sooner or later to seek diversification and a yield of from 4½ to 6 per cent., outside the realm of bonds and mortgages.

It is timely, however, to refer particularly to the preferred stocks mentioned in the table. It will be noted that their present quotations are well below the five-year averages, but that they also show a sufficient amount of stability to give them an appeal to people who do not go into the security markets with a spirit of adventure. They are the American counterparts of the British securities which

some one has picturesquely characterized as the "bus horses" of the stock market.

True, they are all "non-cumulative" preferred stocks—that is, issues whose dividends are contingent upon yearly earnings, so that if for any reason the issuing companies should be unable or find it inexpedient to pay the full rates called for in any given year, the deficiencies would not, as in the cases of "cumulative" stocks, remain as continuing claims to be met out of future surplus earnings. But after all, this is hardly an important question for the intending buyer of such stocks to take into account.

The records of regular preferred dividend payments have remained unbroken in the cases of all these railroads for long periods ranging from fifteen years in the case of the Norfolk & Western to twenty-three

years in the case of the Chicago, Milwaukee & St. Paul.

Analysis shows, moreover, that these roads, with one or two exceptions caused by special circumstances, have proved their ability to earn their preferred dividend requirements from three to eight times over, even in years of poorest business.

Inasmuch as the rates at which their dividends are paid are, as a rule, definitely fixed, the market prices of this class of securities are governed pretty much by the same conditions that govern the market prices of fixed interest-bearing long-term bonds. In fact, it is almost universally recognized that the best of the railroad preferred stocks in many of their characteristics bear close resemblance to some of the better grades of bond investments.

HILL ON HARRIMAN

THEIR BATTLE OVER THE OREGON SHORT LINE AND THE BURLINGTON, AND THE CLIMAX
- OF THE NORTHERN PACIFIC "CORNER," WITH MR. HILL'S COMMENT IN
HIS LETTERS TO AND ABOUT MR. HARRIMAN

BY

JOSEPH GILPIN PYLE

[The articles in this series are condensed from the yet unpublished "Life of James J. Hill," which was written with his approval and from exclusive access to his personal papers.]

JANUARY, 1893, saw the Great Northern line opened for business through to the Pacific Coast. On August 15, 1893, an application for the appointment of receivers was made by creditors of the Northern Pacific who alleged that the company was insolvent. Receivers were appointed; and in October of the same year the Farmers' Loan & Trust Company, as trustees of the mortgage, filed a bill for the foreclosure of the mortgages securing its second, third, and consolidated mortgage bonds. Such a situation could not fail to be of the deepest interest to all interested in the Great Northern, and above all to Mr. Hill.

The situation was canvassed by Mr. Hill with characteristic thoroughness. Control—actual or essential—of the Northern Pacific was no common temptation; it would mean railroad harmony throughout all the territory from the Great Lakes to the Pacific, including seven states. Yet in Mr. Hill's mind such a power was desirable principally because it conduced to the certainty of economical operation.

The three principal parties to the agreement to be reached were the Deutsche Bank of Berlin, Mr. J. P. Morgan, and Mr. Hill. A plan was matured and definitely drawn up in a memorandum to which all the parties gave their assent. This constituted the first "London Agreement," which was finally found satisfactory to all parties. It was drawn up at Mr. Morgan's house in London, and in its terms all the parties at last found common ground on which they could meet.

This agreement contemplated not only a

gigantic financial operation, but something new in the relation of the transcontinental lines. It provided that the bondholders should obtain a decree of foreclosure and have the property bid in by a committee of their own. It was to be reorganized as a new company, with new bonds to the total of \$100,000,000 or more, and the same amount of capital stock. The Great Northern Company guaranteed the payment of the principal of the bonds, and interest on them not to exceed \$6,200,000 a year. In return, the reorganized company was to turn over one half its capital stock to the Great Northern or to its trustee. However, the Supreme Court of the United States, on March 30, 1896, forbade this combination which, in its judgment, was forbidden by the law. Joint ownership in the form proposed ran up against the blank wall of a decree of the Supreme Court. But Mr. Hill had a complete plan of reorganization for the Northern Pacific on new lines worked out by the beginning of 1896, and he and his friends were ready to act promptly after the court had spoken.

The new plan settled upon, by the same parties that had joined in the old, after conferences in London and New York, simply substituted the principle of joint ownership by individuals for that by corporations. What the companies could not do legally was entirely lawful for their stockholders in a private capacity. Mr. Hill and his friends had bought a large block of Northern Pacific stock. Mr. Morgan acted for the body of the old stockholders and for associates of his own

who were putting new money into the enterprise. On March 16, 1896, a plan of reorganization was announced, and declared operative April 24, 1896. It provided for the sale of the property at foreclosure, and the organization of a new company with \$80,000,000 common and \$75,000,000 preferred stock, and the issue of not to exceed \$130,000,000 prior lien 4 per cent. bonds and not to exceed \$60,000,000 3 per cents. These bonds were issued only in part, and from time to time as necessity required. A syndicate consisting of Mr. Morgan and representatives and friends of the Deutsche Bank subscribed \$45,000,000 to underwrite the scheme and \$5,000,000 to make improvements in the property immediately. Mr. Hill was not a member of the syndicate. But by an agreement reached in London between him and Mr. Morgan, he and his friends were to have the right to take such portions of the stock as were not subscribed for by the old stockholders under the plan of reorganization. This amount turned out to be about \$16,000,000, and gave them a large interest and the usual stockholders' voice to the extent of that holding and such additional stock as they purchased from time to time in the management of the company. The right to retire the preferred stock at par on any first of January during the next twenty years was reserved; a provision whose importance, soon to be tested, was not then foreseen. Both classes of stock were vested in five voting trustees for the first five years, the voting power of the trust expiring November 1, 1901. Mr. Morgan was placed at the head of it.

A struggle for control of the Columbia River country was now in sight. The key to the situation was the Oregon Short Line and Utah Northern, formed in 1889 and controlled by the Union Pacific. It was composed of the Oregon Short Line and the Oregon Railway & Transcontinental Company. In 1881 the different interests in the Pacific Northwest had been for the time consolidated by the famous "blind pool," engineered by Mr. Villard. With the \$8,000,000 subscribed for his venture, whose character and purpose he did not disclose until the time for action came,

he organized the Oregon & Transcontinental Company. Controlling, already, the Oregon Railway & Navigation Company, he bought a controlling interest in the Northern Pacific. The whirlwind of receiverships in 1893 carried the whole flimsy combination before it. It was of little value that the Union Pacific had a majority now of the stock of all these companies, for the Union Pacific itself was a formal bankrupt. And each of its chickens followed the old hen into little receiverships of their own. In 1896 the Oregon Short Line operated more than one thousand miles of line.

MR. HARRIMAN HEADS THE UNION PACIFIC

A plan had at last been matured for the reorganization of the Union Pacific. The receivers of the company were discharged. Mr. E. H. Harriman, at first head of a new New York firm of bankers and brokers, then appearing in the railroad world as the controlling power of the Chicago & Alton, came to the head of the Union Pacific. It was evident at this time that the two northern transcontinentals must have the use of the Columbia Valley outlet. For years Mr. Hill had been accustomed to weigh this matter among future possibilities. If he could have his way, there would be no fight with the Union Pacific, and no new railroad built down the north shore of the Columbia, paralleling that already in operation on the south bank. Mr. Hill took up the matter directly with Mr. Harriman. Now Mr. Hill set out his views in detail and in writing. This personal letter to Mr. Harriman is immensely interesting; it is dated September 12, 1899:

"The change in plan of operation made necessary by the sale of the Northern Pacific's holdings of Navigation Company preferred shares and that Company's withdrawal from the agreement leaves the situation as regards the relations of the Great Northern and the Navigation Company in a position of too great uncertainty to be allowed to continue for any length of time beyond what is necessary to rearrange a basis for jointly operating the Navigation Company's lines. As you are well aware, I have always considered it to be for the best interests of all concerned

that the Union Pacific, Northern Pacific, and Great Northern should be placed as regards the Navigation Company where the interests of the first named would be best served by a plan providing practically for the joint ownership of the Navigation Company in such manner as to secure to it the support and benefit of all the traffic of the other three companies. During my recent conversation with you on the subject, you spoke of the desirability of the Union Pacific having its own line to Portland and the Pacific Coast. The same is true of the Great Northern, and to a less extent of the Northern Pacific. I think it goes without argument that each should and will have access to Portland and the Pacific Coast. I can speak with certainty for the Great Northern in that regard. An arrangement for all three companies to use the Navigation Company's lines would necessitate conditions of a permanent character, giving to each company as nearly as may be practicable under all the circumstances the same rights and benefits as would accrue under separate lines owned by each. This would include equal conditions applying to business east or west through the Huntington and Spokane gateways, and an equal division of the business which could properly be divided between the three companies. Local business of each of the three companies to and from the lines of the Navigation Company would readily take care of itself, as also the local business of the Navigation Company.

"I think, with such an arrangement as I have outlined, the Northern Pacific would be willing to arrange for the business of the Union Pacific to go over its lines between Portland and Puget Sound. Possibly the better arrangement would be to include the Portland and Puget Sound business in the general arrangement.

MUTUAL PROFITS

"In looking over this plan, it may appear to you that the Great Northern is assuming a great deal when it has not a mile of railroad at this time in the territory occupied by the Navigation Company, and the Union Pacific has a large majority, through the Short Line, of the shares of

the Navigation Company, but I may urge on the other hand that the Great Northern would bring to the Navigation Company the valuable traffic of about 5,500 miles of railway in a new country which is very rapidly growing, and most of which the Navigation Company could not secure in any other way. This also applies to most of the Northern Pacific's 5,000 miles. The Great Northern and the Northern Pacific would also become in a measure guarantors of the bonds and stocks of the Navigation Company to the extent of whatever sum was agreed upon as the value of the Navigation Company, and this sum would be in any event not far from twice as much as it would cost to duplicate the property to-day. In other words, the owners of the Navigation Company would be protected in the occupation of the country, substantially without competition or diversion of the business, which one or more lines would greatly reduce and ultimately, in my opinion, force a reduction of the capital represented in the Navigation Company's property. I know that country fairly well, and I think that with five million dollars I could build a much better line from our road into Portland; and with, say, two million more, reach the most productive sections of the Navigation Company. This would call for an annual charge of, say, \$300,000, which I feel very sure is much less than we would pay the Navigation Company for doing our business under such a plan as I have outlined.

"I sincerely trust that you will take what I have said herein as a plain statement of the case as I look at it, and I also ask that you will endeavor to have the matter brought to an early conclusion, to the end that we may all shape our affairs to work to a common end and bring about such an arrangement as will be of permanent good to all concerned. If it is the wish of yourself and friends to hold the Navigation Company for your own use, and not to make it available for the Northern Pacific and ourselves, you are certainly in a position to do with it as you may deem best, or otherwise, and I only ask that we be informed at as early a date as is convenient whether we shall look forward to

some such arrangement as I have outlined, or whether we shall take the matter up outside of the Navigation Company. I have included the Northern Pacific, for the reason that I would be unwilling to assume the burden of the Navigation Company jointly with the Union Pacific and leave the Northern Pacific free to divide the traffic as it would be able to do with an investment so much less than the Navigation Company's that the latter would be unable to meet it. I hope you will consider this fully and entirely on a business basis with a view to enabling us to arrive at something practical when I am again in New York, which I hope will be about the middle of October."

This statement covers the case completely. It was an honest, businesslike presentation of the facts, not without occasional acidity and disclosure of possibilities of trouble if anybody wanted to make trouble. It undoubtedly affected profoundly the views of Mr. Harriman.

THE BURLINGTON PURCHASE

It was now definitely agreed between Mr. Hill and Mr. Morgan, representing the two sets of stockholders, and each largely interested in both companies, that some railroad system must be acquired by the Great Northern and the Northern Pacific which should answer the double purpose of furnishing them with their own through line to Chicago and admitting them to the markets of the Middle West and the South and the Southwest.

There were at this time three big systems, the Chicago & North Western, the Chicago, Milwaukee & St. Paul, and the Chicago, Burlington & Quincy.

The Chicago, Burlington & Quincy was one of the best constructed, best managed, and most profitably operated systems in the West. It had its own line from Chicago to St. Paul, well built, well handled, and with good terminal facilities and connections. It had a network of lines in northwestern Illinois, reached Peoria and Quincy, and ran thence to St. Louis. It covered southern Iowa and northern Missouri, from Burlington to Omaha and from Omaha to St. Joseph, Kansas City, and St. Louis. Across

southern Nebraska its lines stretched, with termini at Denver and Cheyenne. Northwest it had a line straight up to and through the Black Hills to Billings, in Montana. To add this system to the Great Northern and the Northern Pacific would be almost like clasping tight together and making homogeneous the two slightly separated parts of one great transportation whole. The total length of lines operated by it in 1901, exclusive of systems leased or otherwise controlled, was 7,911. The Burlington, or "Q," as it was called, had been organized under another name as early as 1849. It absorbed one line after another and built steadily, growing rich and powerful because it ran through one of the best traffic countries in the West. Its capital stock in 1901 was, in round numbers, \$110,500,000 and its funded debt a little more than \$145,000,000.

And there was another good reason for wishing to buy the Burlington road. The Union Pacific people had already been nibbling at this tempting bait. They had visions of a control which would give them undisputed sway south of the Northern Pacific line and through the Middle West. They also wanted to build a fence across the southern and eastern line of their northern rivals. They aspired to domination of all the country west of the Mississippi, save a northern strip reduced to such helplessness that it, too, would finally be taken into camp. Mr. Harriman and Mr. Schiff took up the matter of a purchase of the Burlington with Mr. Perkins and Mr. Harris, representing the latter system. Mr. Perkins had what amounted practically to an option on the property. Mr. Harriman made an offer, but it was too low to be taken into serious consideration. Then, believing that he could make terms satisfactory to himself later, he went back to New York. During the fall of 1900 or the early winter of 1901, Union Pacific interests had purchased eight or nine million dollars' worth of Burlington stock in the open market. Not enough of it was to be had in this way for a control, and the enterprise was stopped by Mr. Hill's negotiations. His ear was quick to catch the warning signal. The Burlington in Union Pacific hands

would be even more dangerous as an enemy than it would be profitable in his own hands as an ally.

No time was wasted, and a sale was agreed upon, subject to the approval of both parties, in March, 1901.

At the directors' meeting of the Great Northern Railway Company of April 20, 1901, a preamble and resolutions covering this important deal were adopted. These stated the opinion of the board that it was desirable and for the best interests of the company that it should obtain, either separately "or in harmony and connection with the Northern Pacific Railway Company," an interest in the Chicago, Burlington & Quincy Railroad Company. After asserting that it could not be obtained except by such joint purchase and the issue of 4 per cent. joint bonds at the rate of \$200 par value for each \$100 par value to be acquired, and that the Northern Pacific had agreed to the proposal, the president was authorized to enter into this agreement for the purchase of the whole or not less than two-thirds of the shares of capital stock of the Chicago, Burlington & Quincy Railroad Company. The two systems actually acquired 96.79 per cent. of the total authorized issue. The report of the president for June 30, 1901, covers all these transactions officially as follows:

"The Great Northern Railway Company and the Northern Pacific Railway Company have jointly purchased 1,075,772 shares of the capital stock of the Chicago, Burlington & Quincy Railroad Company, and in payment for the same have issued their Joint Collateral Trust Bonds and scrip to the amount of \$215,154,000. Further bonds of the same series, up to a total of \$222,400,000, may be issued for acquiring the residue of the stock. The Burlington system includes 7,992.60 miles of standard gauge railroad (on which are 423.15 miles of second track, making altogether 8,415.75 miles of standard gauge single track), and 178.77 miles of narrow gauge railroad."

It need only be added that the purchase in every way justified the calculations of the men who advocated it. In a letter to Lord Mount Stephen, Mr. Hill outlines

vigorously the new strategic position "With the Great Northern, Northern Pacific, and Chicago, Burlington & Quincy under one grand control, we have placed ourselves in a position of strength as to traffic, terminal cities and terminal facilities, and territorial control, which is now the strongest in the West and will daily grow stronger. We have secured another advantage by being in the best position to receive the western movement of population, which is beginning to assume proportions never before reached in the settlement of this country."

The Burlington has remained a powerful system. Neither its shareholders nor its public have had any reason to regret the transfer of control. Its business increased, especially to the south and southwest. Nowhere was it injured.

The total tonnage of the Great Northern increased about 30 per cent. The foreign business increased more than 100 per cent. The Northern Pacific reaped a similar benefit, and along with increased business and profits went decreased rates.

MUTTERINGS OF THE COMING STORM

Union Pacific interests had, late in 1900 or very early in 1901, bought in the market a relatively small stock interest in the Burlington. Finding this route a "no thoroughfare," they had sold it again. Mr. Hill was not ignorant of the significance of this. Neither was Mr. Morgan, to whom, as more particularly responsible for the financial future of Northern Pacific, it was of even greater interest. For the Burlington system and the Burlington territory alone intervened as neutral ground between the Northern Pacific and the Union Pacific.

Early in March the Union Pacific interests made a request for a share in the Burlington property. They proposed to put up a share of the cash and receive representation and influence. But the buyers refused. They had seen their peril. They realized the value of their holdings. Not only were they practically in possession of a useful and remunerative property, but they had interposed a buffer between their territory and that of their most aggressive rival.

Blocked in his scheme to obtain control of the Burlington, Mr. Harriman formed a project whose daring commands admiration from friend and foe; whose execution was so swift, so unsparing, so successful, that but for a single oversight his stroke would have gone home. Had he won to

hostile attack along two thousand miles of battle front. It would have been shut into the narrow strip between its line and the Canadian border. As the Union Pacific would succeed also to a half interest in the Burlington, the situation there would be a permanent deadlock. All the system



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EDWARD H. HARRIMAN

The genius of the Union Pacific System who by a bold stroke almost succeeded in wresting the control of the Northern Pacific Railway away from Mr. Hill and his associates of the Great Northern Railway in the battle to obtain the railroad control of the Northwest

his goal, the future of the Great Northern would have been limited and uncertain indeed. The Union Pacific interests had determined on nothing less than the capture of the Northern Pacific itself, by purchasing a majority of its stock. The boldness of the project, so different now in magnitude from the old days when Mr. Villard had realized it—\$78,000,000 to put up instead of \$8,000,000—allied it to a work of genius. Suppose the Union Pacific interests in control of Northern Pacific. At once the Great Northern would have had to make terms with its owners or bear the brunt of incessant

of relations and the scheme of traffic worked out so carefully by Mr. Hill would have been either suspended or destroyed. There could be but one issue from a position so intolerable. He would have had to make the best terms he could. And the terms dictated by an interest that would then have reached from New Orleans and Galveston to Winnipeg, and from San Francisco and Portland and Tacoma to Chicago and St. Paul and Duluth, were not likely to be tolerable. The victor could have made those terms almost what he pleased.

It was with a clear vision of this, making



THROUGH THE CASCADE MOUNTAINS ON THE GREAT NORTHERN RAILWAY

"You spoke," said Mr. Hill to Mr. Harriman, "of the desirability of the Union Pacific having its own line to Portland and the Pacific Coast. The same is true of the Great Northern. . . . I think it goes without argument that each should and will have access to Portland and the Pacific Coast. I can speak with certainty for the Great Northern in that regard"

the great venture worth while, win or lose, that the Union Pacific interests started their campaign for buying control of Northern Pacific. After all, it was not such a hopeless bit of crusading as it seemed at first glance. The latter com-

pany had outstanding \$80,000,000 of common and \$75,000,000 of preferred stock. Holders of both shared in the control and direction of the property. It was never the custom for the managers and directors of a big system to own an absolute majority

of its stock. From 30 to 40 per cent. was usually deemed ample to secure or protect control. Mr. Hill personally never needed anything like that amount. The loyalty of his stockholders made it unnecessary. He said, speaking of this very occasion: "I may say that I think I controlled the policy of the Great Northern Railway Company and its predecessor as fully as the policy of any railway ever was controlled in this country, and I never owned over 10 or 12 per cent. I never owned a majority of the stock, but I always had a following of good, loyal stockholders, and the men who were most active, covering about 33 or 35 millions out of 125 millions, practically formed the company, and they desired that their other shareholders, whoever they were, new or old, might participate in anything that they were doing, if they thought it would be any advantage to them as shareholders."

There was little possibility of uniting the scattered stockholders representing the balance of power in any large corporation into a coherent opposition which could overthrow those in control. At worst, no such operation in Northern Pacific was likely to be carried through without sending bubbles to the surface in time to give ample warning.

So the interests represented by Mr. Hill and Mr. Morgan did not have a majority of its stock. It had not occurred to them that they would need it. There was no dissatisfaction in their camp. They did not do business that way. And a frontal attack was something they did not expect. For once in their lives they were caught napping. They had not overlooked the possibility, they had discounted it. Examining it coldly, they had dismissed it as a chimera. Mr. Hill said: "As I remember it, one of our directors raised a question that inasmuch as the purchase of the Burlington stock and the creation of a bond to pay for it involved the joint and several liability of the entire amount of the purchase, it was a matter of consequence to the Great Northern to know that the Northern Pacific would not pass into the hands of people who might be interested in other directions, in developing in other directions or other



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J. PIERPONT MORGAN

Who with Mr. Hill played the chief rôle in the battle for the control of the Northern Pacific. "It was a time when men counted for millions. Absolute confidence existed between the two men . . . so Mr. Hill and Mr. Morgan agreed to stand by each other. It was man's word against the world"

sections of the country; and I remember I answered that, with what myself and friends held at that time and what Morgan & Company held, we would have somewhere in the neighborhood of 35 or 40 millions of the stock out of a total of 155 millions, which was larger than is usually held in any of the large companies. I did not think at the time that it was at all likely that anybody would undertake to buy in the market the control of 155 millions of stock." In March, 1901, Mr. Hill said that he had no knowledge of any Union Pacific parties holding stock in the Northern Pacific. Early in May they advised him that they had secured a substantial control. And they had reason to believe it. So lightning-like was the assault.

Mr. Hill was under no illusion as to what the success of the Union Pacific in this foray would mean. It was the counterstroke to the Burlington purchase. Every consideration which made the latter advisable made the former ruinous. This was not a question of prestige, it was a matter of life or death. At the time, and



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THROUGH THE CASCADE MOUNTAINS ON THE NORTHERN PACIFIC RAILWAY

"The election of the Board of Directors of the Northern Pacific was fixed for October. When the smoke cleared away" (after the struggle in which Mr. Harriman had tried to wrest control of the Northern Pacific away from Mr. Hill and his associates) "the defender of the property had won a clear and undoubted victory."

again in later years, he described it as such. "The value of the property would be destroyed. Its growth would be restricted. It would be controlled in the interests of another property or body for the reason that it would be restricted or might be

restricted so as not to interfere with the growth of the other property. We were making great efforts, and very successful efforts, at that time, to settle up all the northern section between the Great Lakes and Puget Sound, and bringing in all

normous number of people, many of these people coming from the line of the Union Pacific in Kansas and the Southwest, bringing them up here. And I remember one reason why they wanted to get a joint interest in the Burlington; they said we were getting too strong for them, we were going down into their country and taking people from there. That was one of the reasons they gave." Still more explicitly he explained the inevitable consequences. "If that stock had not been redeemed, and the Union Pacific controlled the Northern Pacific and half the Burlington, they would very soon control the Great Northern. Because if the Union Pacific controlled the Northern Pacific and controlled the Burlington to the extent that the Northern Pacific half-interest would control it, we would be deprived of any access that we could control for a moment longer than the good will of another company; and we could not go on building up a business on any such condition. And let me add, further, if I may, that it would have almost destroyed the value of the Great Northern property or its shares for its shareholders. I would have recommended them to sell their line at once on the best terms they could get. It was not a question of competition. It was a question of physical inability to reach the market. We would be shut out from the markets."

The secret had been well kept. During the month of April the Union Pacific interests were quietly gathering in all the Northern Pacific stock they could reach. Many holders who were friendly to those in control were taken unawares and, to their lasting regret, parted with their shares without any idea of the purpose for which possession of them was to be used. One stockholder to the extent of three and a half millions had already sold when he received a telegram from Mr. Hill asking him not to. He said afterward that he would rather have burned his stock if he had known what it meant. This buying continued through the first week in May; and by that time the Union Pacific people had secured \$41,000,000 of preferred and \$37,000,000 of common. The total, \$78,000,000, was a clear majority



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HENRY VILLARD

Under whom the Northern Pacific Railway declined until it went into the hands of receivers in 1893. "The situation was canvassed by Mr. Hill with characteristic thoroughness. Control—actual or essential—of the Northern Pacific was no common temptation; it would mean railroad harmony throughout all the territory from the Great Lakes to the Pacific Coast"

of the \$155,000,000 outstanding capital stock of the Northern Pacific. They believed that they had a sure control and rested on their oars.

After the Burlington purchase had been concluded Mr. Morgan, whose health was poor, went abroad. His first news was that the control of Northern Pacific was in danger, if it had not already been lost. Mr. Hill and his friends, who were advised at last by the steady rise in price of the stock and by whispers of something going on, such as inevitably circulate in the most covert transactions, had now sized up the situation. It was very late in the day and much ground had been lost. On the second day of May, only one week before the storm burst, Morgan & Company had, in the ordinary course of business, unsuspectingly sold more than a million dollars of Northern Pacific. On the same date the treasurer of one of the proprietary companies of the Northern Pacific sold 13,000 shares of the common stock. Mr. Hill had reached New York only the day before. He lost no time.



ALONG THE UNION PACIFIC

"During the month of April the Union Pacific interests were quietly gathering in all the Northern Pacific stock they could reach. . . . By the first week in May they had secured \$41,000,000 of preferred stock and \$37,000,000 of common. The total, \$78,000,000, was a clear majority of the \$155,000,000 outstanding capital stock of the Northern Pacific. They believed that they had a sure control and rested on their oars."

The steady rise in price from \$110 to \$120 was to him like a steady fall of the barometer. Soon, also, glittering possibilities were dangled before him. He was assured that control of the Northern Pacific had already passed into other hands and would be held there firmly. But his position and his power, he was told, would be made greater than ever before. It was a kingly crown in the railroad world that was offered to him. This was his reply: "I simply said that it was not necessary

to bribe me to do the fair and respectable thing toward so close a neighbor as the Union Pacific; and on the other hand I could not be bribed to do wrong in any way." The cat was out of the bag. Mr. Morgan was advised by cable, and he and his friends and Mr. Hill took counsel. On the 7th of May, Mr. Hill and his friends on whom he could depend held only from \$18,000,000 to \$20,000,000 of common, and the Morgan Company from \$7,000,000 to \$8,000,000. At a disadvantage here.

they had the all-important certainty in their minds that upon the common stock alone rested the ultimate control of the property. The \$37,000,000 held by the Union Pacific was less than a majority of \$80,000,000; but the margin was narrow.

Everybody knew what it would mean to go into the market and buy the amount necessary to convert the Hill-Morgan holdings into a majority. Prices would soar; speculative purchases and sales would confuse and impede the transaction; and the almost irresistible temptation would be offered to those really friendly, but not absolutely identical with this interest, to sell out at the big figures that were offered. It was a time when millions literally were to be made, not by treachery, but merely by a lesion in friendship. But it was a time when men counted for as much as millions. Absolute confidence existed between the two men most concerned. Exactly as the four associates made all their arrangements to buy the St. Paul & Pacific, and pledged all their "fortunes and their sacred honor" without a word in writing, so Mr. Hill and Mr. Morgan agreed to stand by each other, let come what might. It was man's word against the world. Mr. Morgan described the position, his quick vision in a time of doubt and danger, and his instant decision, in this laconic fashion: "We had reorganized the Northern Pacific. We had placed all the securities of the Northern Pacific, and I knew, as I had always supposed, that there were people—friends of ours and other people—who held practically enough Northern Pacific—we always supposed we had with us people upon whom we could depend to protect our moral control of the property—and consequently when that news came to me I hadn't any doubt about the fact of the matter, and at the same time this news came so strong, whoever had acquired it, I felt something must have happened. Somebody must have sold. I knew where certain stocks were, and I figured it up. I feel bound in all honor when I reorganize a property and am morally responsible for its management to protect it, and I generally do protect it; so I made up my mind that it would be desirable to buy 150,000 shares of stock,



MR. JACOB H. SCHIFF

What Lord Mount Stephen was to Lord Strathcona in the development of the Canadian Pacific Railway; what J. P. Morgan was to Mr. Hill in his development of the Great Northern Railway, so was Mr. Schiff to Edward H. Harriman in his plans for extending the Union Pacific

which we proceeded to do, and with that I knew we had a majority of common stock, and I knew that actually gave us the control and they couldn't take the minority and have it sacrificed to the Union Pacific's interests."

That "which we proceeded to do," covering in five words an undertaking so great and apparently impossible, is delightful. What the Morgan firm had to do was to go into the market, where the waves were already telling of rapids and cataracts ahead, and buy about \$15,000,000 of Northern Pacific stock. Before doing so they asked Mr. Hill if he and his friends would hold their stock and not sell out. His reply was characteristic. "I said myself and friends would stand without hitching." And they did. For himself it was easy. Money could not make him break faith. To be able to answer in the same positive and confident way for the band of friends who had retained large interests in the projects with which they knew he was connected by ownership or by his personal activity was something to be prouder of than possession of a dozen

railroads. He appealed to their loyalty. The way in which those friends stood by him through this crucial time is one of the highest tributes that could be paid to any man. When the \$15,000,000 of stock was bought and the sky cleared, the Union Pacific people were found with a majority of the total stock of the Northern Pacific. The Hill and Morgan interests had more than \$42,500,000 of the common stock, a majority of about \$3,000,000.

The great advantage of Mr. Hill in this struggle was that, having participated in the reorganization of the Northern Pacific, he knew the conditions under which its stock had been issued and by which it might be retired. The Morgan firm, of course, had them by heart. The all-important one was that the preferred shares could be retired on any 1st of January prior to 1917. The Union Pacific interests could scarcely have been ignorant of this, but neither could they have appreciated what might be done under it, or they would have bought more common and less preferred. The election of the board of directors of the Northern Pacific was fixed for October. When the smoke cleared away, after the 9th of May, the Union Pacific interests had stock enough to choose the next board of directors, since both classes of stock were entitled to vote at this election. With their friends in a majority, they could, if they were present and voted at the October meeting, name their own directors and so prevent the retirement of the preferred stock. On the other hand, the existing directory was, of course, friendly to and representative of those in possession. It had power to postpone the annual meeting from October

till after January 1, 1902. Thus extending its own period of life, it could have retired that stock before its holders ever had a chance to vote. The defenders of the property had won a clear, decisive, and undoubted victory.

There was nothing to be gained for either side by fighting. They did not wait to scrap it out in October, but agreed to place the Northern Pacific interests practically without reserve in Mr. Morgan's hands. The following bulletin was published June 1, 1901: "It is officially announced that an understanding has been reached between the Northern Pacific and the Union Pacific interests under which the composition of the Northern Pacific board will be left in the hands of J. P. Morgan. Certain names have already been suggested, not now to be made public, which will especially be recognized as representative of common interests. It is asserted that complete and perfect harmony will result under the plan adopted between all interests involved." Shortly after May 9th there was a conference at Mr. Harriman's office, where all parties agreed that the board of directors to be elected at the annual meeting in October should be named by Mr. Morgan, and this agreement was carried out. Mr. Harriman was placed on the board of directors of the reorganized Burlington. Union Pacific interests received a representation on the new North-

ern Pacific board of directors.

On the 13th of November a resolution was passed giving notice of the retirement of Northern Pacific preferred stock. This was executed on the first day of January, 1902, by the delivery of the stock to the Morgan firm for payment in cash at par.



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MR. HARRIMAN

In a personal letter dated September 12, 1899, Mr. Hill wrote to Mr. Harriman: "I sincerely trust that you will take what I have said herein [a warning that Mr. Hill was determined to put his railroad through to the Pacific Coast] as a plain statement of the case . . . that you will . . . have the matter brought to an early conclusion, to the end that . . . we may bring about such an arrangement as will be of permanent good to all concerned"



UNIVERSAL MILITARY SERVICE IN ARGENTINA

BY
GEORGE MARVIN

TODO Argentino está obligado al servicio y instrucción militar de acuerdo con las disposiciones de esta ley. ("Every Argentine born or naturalized) is liable to military service and instruction in accordance with the provisions of this law.")

Thus runs the first article in the Argentine Magna Charta, the charter of Argentine liberties and rights and duties; for in the march of democratic governments, this southern republic is one jump ahead of us in the accepted realization that citizenship is something more than pros-



"JURAMENTO DE BANDERA"

The new draft taking the oath of allegiance by saluting the national colors as they pass individually before them. Eighteen thousand men are thus mustered into the army every year

perity and an assertion of rights.

With those words begins the draft of the organic military law printed in the little leather-covered book which Colonel Eduardo Raybaud, Military Attaché of Argentina at Washington, carries around with him. He carries that book, not as Military Attaché, nor as Colonel in the Argentine Army, but rather as a citizen of the Argentine Republic. And every other citizen, born or naturalized, of the Argentine Republic possesses a similar small, leather-bound book. It is at once the assurance of his citizenship and the pledge and definition of his duties as a citizen. It is the badge of his privileges and obligations; his index number in the Commonwealth. By virtue of that book he votes. When he goes



A MILITARY BASE HOSPITAL

Universal service draws directly upon the civil medical profession for the hospital corps, both active and reserve

abroad he has to produce his book to get a passport. Without it he has no rating, responsibility, or political rights. And by means of the information contained in all those yellow books, duplicated in the files of the Central Government, Argentina

knows exactly what it may count upon in the hour of need and where it can be found.

Wherever you find a citizen of Argentina outside his native land, in a café in Paris, on railroads in Chile, in New York hotels, the chances are he can produce this universal credential and identification. He is proud of it, too, almost as though it were a kind of Legion of Honor red ribbon sticking in his buttonhole. As a matter of fact it does show that, in a big sense, he is a member of his national legion of honor.



A SECTION OF ENGINEERS

These men have just completed the bridge on which they are standing. They are recruited from engineering and scientific civil professions



A NON-COMMISSIONED OFFICERS' CLUB

Every regiment has one of these coöperative organizations in which the men can spend their spare time comfortably

The inside of Colonel Raybaud's book, which is precisely like all the rest, contains the most searching registration. It goes away beyond census statistics because it is intended at the same time to serve both as census information and as military registration. On page 1, for example, you will find the owner's name written out in full, under the particular military region and subdivisional district to which he belongs. He has a given designating number and is assigned to the class corresponding to the year of his birth — 1865, 1880, 1896, as the case may be. Then follows his parentage, permanent and temporary address, and details of physical identification similar to those which are asked for in issuing passports. In a boxed-in space for that pur-

pose is the *impresión digital del pulgar de la mano derecha*, where the imprint of a strong military thumb serves as the scientific last word of Bertillon identification.

On the opposite page the photograph of "Number 458" is pasted, framed by an enumeration of his abilities, such as riding a horse, driving a motor car, speaking foreign languages, etc. The result of all this and similar data is to establish beyond question who Number 458 is, where he can be found (for blanks are left in which every

change of residence must be promptly recorded and reported), and just where and how he fits into the big scheme of national defense; whether he is supposed to navigate a ship or a horse, whether he is first line material or reservist, what particular



SIEGE PIECES

Krupp guns of this type are being used by the Central Powers in the present war, though the calibre has been far exceed-



THE CAVALRY OF ARGENTINA

All officers of the mounted arm must first qualify in the cavalry school of equitation, corresponding roughly to the course at Fort Riley, Kansas. Below: A squadron of the second cavalry. All cavalry regiments carry lances, small Mauser carbines, and sabres



ARTILLERY IN ACTION

Until the European War began all ordnance was made at the Krupp works in Germany, with modifications by the Argentine Military Commission, which was sent abroad to supervise and direct the manufacture of the ordnance



FIELD ARTILLERY

These pieces, like all Argentine ordnance, are manufactured in Europe under the supervision of the Argentine Military Commission. This battery corresponds to the United States Army 3-inch field piece and the French "75's"

organization he belongs to, who is responsible for him, or for whom he is responsible. By way of making all this information more useful the little yellow book also contains blanks for the record of compulsory medical examinations which occur at fixed intervals. Thus the Republic may know at any time just how fit Number 458 is to perform his specified job when the need comes for him to perform it. And toward that same end record is kept in individual books, and in the corresponding headquarters' files, of the period and character of each man's service, promotions or demotions, his transfers, periodical instruction as a reservist. Colonel Raybaud is by profession a soldier and as such exempt from a great deal of his government's solicitude. But the State keeps track of those who are not soldiers by profession in these double records of books and files away on into middle age, until they are forty-five years old, by a prescribed annual attendance at target prac-

tice which affects not only those who have been drawn every year for service with the colors but also the superabundant number of annually available citizens who are not drawn in the military *sorteo* (lottery).

In Argentina the idea of universality is not incompatible with the idea of liberty. Citizenship in a republic carries with it responsible duties as well as irresponsible privileges and exemptions. And in Argentina the people long ago voted not to leave the performance of the duties of citizenship to the whim or the varying sense of duty of the individual. They voted to make such performance incumbent by law upon all alike, according to the practice as well as the spirit of true democracy.

In the United States we have the same convictions. The payment of taxes is not left to the undefined, patriotic impulse of a volunteer, and the State, many years ago, decided that education should not be left to the whim of the individual but should be compulsory for all.

EJERCITO ARGENTINO

Región Distrito Militar N° 1

Oficina enroladora de Londres (Buenos Aires)

Matrícula individual N° 458

Clase de 1866 (el año de nacimiento)

Libreta de enrolamiento de Eduardo
Raybaud hijo de Eduardo
y de Jana Congraham nacido
el 3 de Febrero de 1865
en la Capitales de Buenos Aires y con actual
domicilio en:

Departamento o Partido Londres Cuartel

Política o Sección Argentina

Eduardo Raybaud
Firma del enrolado

Impresión digital del
pulgar de la mano de-
recha.

PLACACIÓN

(Deben llevar en esta libreta los designados que se corresponden al enrolado)

Color de la piel: blanca

Ojos: azules - verdes - pardos - negros - chinos - pardos - rojos

Maris: recta - acuminada - media - mediana - gorda

Talla: 1 metro y 63 cent.

Señales particulares: ninguna

APTITUDES:

¿Sabe andar a caballo? Si

¿Sabe dirigir automovil? Si

¿Sabe conducir vehiculos? Si

¿Sabe leer? Si

¿Sabe escribir? Si

Profesión militar

Setiembre 15 de 1911

J. Garcia Chicharro
Jefe de la oficina registra

RETRATO

PAGES FROM AN ENROLMENT BOOK

Every male citizen of Argentina is required to make a similar record of enrolment, which serves as his right to suffrage, his index number in the national defense, and as the definition of his military usefulness



PHYSICAL FITNESS THE BASIS OF MILITARY SERVICE

Setting-up drill in the schools for non-commissioned officers. These men are kept in training for eight years and form the professional backbone of the army

Now, curiously enough, this basic idea of the State insisting upon the minimum quality of its citizenship was transplanted in 1868 from the United States to Argentina by the patriot Sarmiento who, while Minister at Washington, was elected

President of the southern republic. Sarmiento brought with him and introduced during his administration throughout Argentina the law of compulsory education. A large part of the territory (of Argentina) is still elusive. Illiteracy still exists there



THE MAIN GOVERNMENT ARSENAL AT BUENOS AIRES

All the artillery and infantry ammunition used in Argentina is manufactured in the country and other equipment bought abroad is assembled either in this main arsenal or in other branch plants. Since the European War began Argentina has been planning to manufacture all its own ordnance

about 25 per cent., but it is illegal, not administratively accepted as it has come to be in Mexico or in Haiti, or as it persists to the high percentage across the Andes in Chile, in spite of the efforts of an enlightened Government. And furthermore, illiteracy is disappearing from Sarmiento's country like snow from the foothills of the Cordilleras in the spring sunshine of sub-equatorial October.

But Argentina went further with her insistence upon responsible citizenship. In 1911, the exercise of the suffrage was made compulsory. Every male citizen of voting age has got to vote if he can get to the polls or be carried there. Argentina believes that in a republic an election ought to mean an actual consensus of opinion by the entire electorate. Universal exercise of the suffrage was a natural and immediate outgrowth of universal military training and service that were established by law in 1901.

TAKING COUNT OF THE NATION'S STOCK

Every native or naturalized citizen of Argentina, at home or abroad, on reaching the age of eighteen years must be enrolled. The Federal Executive Power takes charge of this national enrollment which, as already explained, serves at once as a registration of voters and national defenders. A given individual, if at home, is enrolled in one of the five military districts into which the fourteen states and ten territories of Argentina are divided. If he resides abroad he is enrolled in his Consulate, for the Government follows him with precision wherever he may wander. With the exception of these consular registrations abroad, the general enrollment is entirely in charge of the military authorities, who are counted upon to get more thorough results than a civil census provides.

Their operations are carried out in accordance with the laws of 1901 and 1911, by the provisions of which every citizen of military age was recorded, subsequent enrollments being provided for within three months after each citizen should have reached eighteen years of age.

There are many sensible exemptions from the law of military service; there are

none from the duty of enrollment. The Government insists upon having accurate information. For example, no omission or error in enlistment can justify the lack of fulfilling the obligations of military service; citizens failing to comply with the regulations for enrollment are regarded as infractors of the law and required to perform service in the ranks of the general army for one year besides the time of service required by law. If the malefactor is more than forty-five or less than nineteen, and therefore useless for all classes of service, he is required to pay a fine of 100 pesos (\$50.). Even an enrolled citizen who changes his domicile and fails to notify his military district within four months of such change is fined twenty pesos; parents, teachers, or guardians who do not loyally comply with Section 8 of the law, which requires them to furnish information to their district enlistment offices as to the enrollment of their minor sons, pupils, or wards, are also fined twenty pesos.

Such fines are consequent on the evasion of the law by the citizens to whom it applies, but corresponding fines are also attached to evasions or incompetencies in the administration of the law by those in authority. For instance, the omission on the part of the Chief of a Military District or enlistment office to enroll a citizen, thus enabling him to elude military service, is punishable by a fine of 100 pesos, if the offender be a civil functionary, and by military discipline, in the event of his belonging to the army.

THE SPIRIT OF THE LAW

The character of all penalties imposed for infractions of this universal law are very significant. Throughout the law, the purpose of the Government is very clear; they are not seeking militarism, but efficient service, and so the penalties are not so much punitive as they are constructively serviceable. Wherever the culprit is able to serve, infringement of the law is made punishable by maximum instead of minimum service. Thus the working of the law, so far as training is concerned, is apt to make at least as good a soldier out of a shirker as out of a responsible patriot. In the same spirit, the entire proceeds of all these fines

collected are devoted to the purpose of developing target practice, which is obligatory not only on the annual contingents drawn from the enrollment lists but also on all physically able male citizens remaining over from the *sorteo*.

It is this spirit which made the law at once popular and keeps it so. The same spirit is manifest in other provisions of its working. In the matter of exemptions from liability to service, for example, the law is most liberal. Naturally those are exempted who on account of sickness or physical defect are unfit to serve. The natural or legitimate son of a widowed mother who contributes by his labor to her support or to the support of a father seventy years old is exempted and so is a brother supporting by his labor minor brothers, orphans of his own father and mother, or invalid brothers or sisters. Members of the public administration of the Nation and of the provinces, governors and secretaries of Federal territories go free during the term of their function or office, as do all members of the regular and secular clergy, although backsliding from this last category is provided for by requiring every ex-ecclesiastic, who for any reason whatever shall give up his high calling before attaining the limit of military age, to perform the regular military service.

But generosity is not slackness. Even the properly exempt from service must do their bit by contributing a military tax toward the national defense. This tax is paid in the ingenious form of a special stamp, furnished by the War Department, which is attached to each man's exemption papers. Every total exemption record granted to a citizen called to serve in the standing army carries a stamp of the value of twenty-five pesos (\$12.50); exemption from the reserve is sanctioned by a twelve-peso, from the national guard by a six-peso, and from the territorials by a two-peso stamp. It frequently happens that a man exempt from service is too poor to pay the military tax without real hardship, and in every such case the law again mercifully frees him, safeguarding this charity by requiring a written declaration of inability signed before the Board of Exemptions by two witnesses of known responsibility, who

are bondsmen to the extent of the specified liability for fraud.

And all the money paid in by military taxes, like the proceeds from enrollment and service penalties, goes into the general revenue to be placed entirely at the disposal of the War Department for rifle practice and military athletics. In a beneficent and a patriotic sense the Argentine Government gets its citizens both coming and going.

THE WORKING OF THE LAW

On the basis of the enrollment lists, then, but two years after their enrollment the youth of Argentina go up in annual embryo armies to the *sorteo*, or military drawing of lots. Between 50,000 and 60,000 of this twenty-year-old material matures annually, from which available total 30,000 men are chosen each year for the army and navy. The selection is made in this way; the number of conscripts which each military district is to furnish having been determined, these are distributed proportionately among the various counties or divisions which belong to each district.

On the 15th of October in each year all the men of that vintage present themselves at their respective enlistment offices, which have been advertised several weeks ahead. It is an occasion of the utmost seriousness and formality, always observed in public. Suppose we are in the town of Arrecifes, in Mobilization District 13, of the Second Region. In the presence of the Class of 1916 a lot of numbered *bolillas* (balls) equal to the total enrollment of twenty-year-old Arrecifes that year are placed in a big crystal bowl. From this receptacle a subordinate official draws out at random one by one the *bolillas*, singing out in a loud voice each number he reads. Recording clerks enter these numbers opposite the alphabetical list of 1916 Arrecifes, the first number drawn corresponding to the first name on the list, while others note on the enrollment registers the new number which the *sorteo* has attached to each man. No. 458 on the original enrollment, for example, might be No. 18 on the *sorteo* list and by the same token be drafted into the navy.

When the entire drawing for the region

is completed the highest numbers are assigned to the navy until each division or county in a given region has supplied its quota. Out of the remaining numbers enough are assigned to the army in the decreasing order of their numbers until its quota has been supplied.

When all the drawings have been made, covering the entire class for that year, and the lists assembled at headquarters, the first 8,000 of the new enumeration according to the *sorteo* are drafted into the navy for two years. Those coming next in order on the new lists, to the number of 18,000, are incorporated in the standing army for one year. In Argentina, as well as everywhere else, it takes just about twice as long to make a useful man-o'-war's-man as it does to turn out a soldier.

The numbers above are not hard and fast; they are those at present in order, but the annual contingents drawn, both into the army and navy, may be at any time augmented if the appropriation law so prescribes. It will thus be seen that Argentina has for the present decided that she only needs to take each year for her army and navy about 30,000 of her available twenty-year-old sons out of their civil occupations for intensive training. But the remaining 50 per cent. of those available each year do not go scot-free. Every one of them is obliged to shoot a certain number of rounds at target practice annually, in some one of the hundreds of rifle clubs all over the country, each undergoes regular medical inspection, and each has equipment and kit set aside for him in his respective district. In any given year, according to this system, the standing army is composed of the 5,000 professional soldiers—staff and line officers, non-commissioned officers, signal corps men, bands, etc.—and the 18,000 conscripts of that year, a total of 23,000 men actually in continuous and active service at any time.

THE ARMY OF THE NATION

The entire military establishment they call, "The Army of the Nation," for it is the available strength of the whole nation armed for defense; the nation in arms, if you will.

Everybody in Argentina, therefore, from eighteen to forty-five is a soldier and so considers himself. The army of the nation is composed of:

- (1) The Army of the Line
- (2) The National Guard
- (3) The Territorial Forces

These divisions correspond in general to those of most of the European nations, the basic idea of which is that every individual shall have passed through a similar minimum training, the three distinctions being based upon age and presumable fitness for service. Thus the Army of the Line is made up of the standing army of 23,000 as already defined plus the nine classes, from twenty-one to thirty, which have already in succession passed through their year of intensive service. These nine classes constitute the immediately available reserve of the standing or permanent army and they are maintained at a reasonable pitch of military efficiency by the obligation to serve, during the nine years of their reserve duty, in four periods of manœuvres with the regular army. Two of these periods are of a month each; the others, a fortnight apiece.

By the working of this plan the Argentine people can mobilize at any time of emergency an able-bodied army of 185,000 soldiers between the ages of twenty and thirty fully organized and officered. In order that this force shall remain perfectly homogeneous and act as a unit, every man in it, from the moment of his enrollment at eighteen until the completion of his thirtieth year of age is, so far as his military function is concerned, directly and exclusively under the Federal Government.

A REAL NATIONAL GUARD

In the Argentine Republic what they call the National Guard corresponds to the French Reserve, the German *Landwehr*, or the Turkish *Redif*. It is made up of all the classes between thirty and forty years of age, with the commissioned and non-commissioned officers of the reserve. This force has a tactical organization corresponding exactly to that of the Army of the Line but each one of the fourteen provincial governments (corresponding to our states) takes care of everything rela-

tive to instruction and organization in its respective jurisdiction. Buenos Aires is the centre of a federal district corresponding to the District of Columbia, which includes Washington. That military area, together with the national territories, remains under the direct authority of the National Government.

When officers and privates of the reserve reach the age of thirty they pass in a kind of citizen wave into the Guard of the Nation. During their ten-year period of national guardianship in their various states they are called four times to the colors for periods of instruction and manoeuvre of not more than fifteen days each, when the National Government again assumes complete direction of them with responsibility for their subsistence.

At forty the National Guard, still under separate state responsibility, passes again in annual contingents automatically back into the Territorial Guard for the last five years of military responsibility under the law. By this time gaps will naturally have occurred in their ranks and the filling of these gaps is provided for by appointments and details from the great background of those left over from the *sorteo*—available riflemen and men who have passed examinations qualifying them for commissions. This is a rich background. When the present final draft of the general law went into effect in 1911 rifle clubs were already organized in eighty-eight colleges, universities, and academies, and in 1915 the number of civilians who had qualified as marksmen had grown to the very reassuring number of 313,474.

Leaving these civilian minute men entirely out of account, the Republic of Argentina in the event of war can call to the colors 350,000 trained men. These men have been trained at a minimum of dislocation of the nation's social and industrial life so slight as by common consent to be negligible. The burden of military service, cheerfully borne, falls first upon those most able to bear it and who most ably can perform it—the young men between twenty and thirty years of age.

The year of intensive service comes at a time when the vast majority of these young men have not acquired the responsibilities of marriage nor of business.

The idea of a citizen volunteering to defend his country is fast passing into the limbo where it belongs. Twenty nations in Europe, belligerent and neutral, have abandoned it, Australasia has abandoned it, and so have Japan and the three largest republics of South America. But there is a proper use of "volunteer" in the military and national sense, and that is in the choice of a military profession. Chapter 9 of the Argentine military law provides that there shall "be in the standing army 5,000 volunteer soldiers." In order to attain the rank of lieutenant in the army a young man must have passed four years in the National Military School at Buenos Aires, which corresponds to our Military Academy at West Point. Those men make up the guiding intelligence of the army. Every one of them is a "volunteer" in the Argentine acceptance of that term.

A great many other "volunteer" officers are admitted to the reserve in the grades of first or second lieutenancies who have qualified for those positions through courses in the civil universities and colleges, backed up by a commuted period of a few months' service and vouched for by mental and physical examination. In order to reach the grade of major and beyond, every candidate for promotion must have passed creditably through two or three years of additional study in the Army War College. In this way the Government insures a high type of military intelligence in its staff officers and higher field commands.

Volunteers also enlist for the non-commissioned service, for which they are thoroughly prepared in a special school which gives them a training only secondary to that in the Argentine West Point.

Another liberal working of the military law accepts volunteer service from one up to five years and provides for the retention until the age of sixty of those who can pass periodical tests of efficiency during that period.

THE WAR'S MOST IMPORTANT HINT TO US

THE DESIRABILITY OF INVOKING THE AID OF PHYSICAL SCIENCE AND THE GENIUS OF
INVENTION

BY

REAR ADMIRAL BRADLEY A. FISKE, U. S. N.

(PRESIDENT OF THE UNITED STATES NAVAL INSTITUTE)

THE fact that a fleet has been able to imprison another fleet in restricted waters, and practically to drive the sea-borne commerce of the latter from all the oceans of the world, has been mentioned many times as pointing out the most important lesson of the present war, the influence of sea power. But clearly this points out no new lesson, but merely illustrates an old one that was learned twenty-five years ago from the late Admiral Alfred T. Mahan, who himself learned it from the pages of history.

Can we not detect some other lesson, some hint that will help us prepare for our struggle that is to come?

In the earliest days of the world, and in the earliest days of the individual man, fighting was done, and is done now, with the arms, the legs, and the teeth. But rude clubs and simple missiles have always been so near to hand that they have been largely used in the tribal wars of history, and are used in combats between individuals now, as supplements to those primal means of defense which nature provided. As time went on, and the mechanic arts progressed, apparatuses more and more removed from the club and stone, more and more artificial, more and more complex, more and more difficult to design, to make, and to employ, have come gradually into use in armies and navies, for fighting on the land and on the sea; but they have come in to use more in navies than in armies.

Ever since those days, the gradual increase in the power and controllability of weapons which mechanical progress has

permitted and occasioned has advantaged navies more than armies. The underlying reason is doubtless the smoothness of the sea compared with roughness of the land, broken as the land is by mountain and hill and plain and forest and river; which has resulted in the ability to build larger and speedier craft to travel on the water than could possibly travel on the land. If the surface of the land were everywhere as smooth and level as a billiard table, the relative power of land and maritime weapons would probably be reversed; and armies would rush over the earth at prodigious speed, encased within traveling forts. Mechanical progress may bring this thing to pass even though the earth be rough, as the writer suggested in the United States Naval Institute six years ago, and as the present British "tanks" presage.

The invention of gunpowder, or rather its invention in Europe and the beginning of its use there, seems to be the starting point of that rapid progress in the application of physical science to war which is still continuing with unabated, in fact with constantly accelerated, speed. The advantage given by the new propellant was so unquestionable and tremendous, and the human attributes employed in inventing, making, and improving it were evidently so different from the human attributes required to use it successfully in actual fighting, that men were made to realize that by using their intellects in time of peace, and by taking advantage of facts known to science, they could prepare weapons for fighting that would be far more effective than could be prepared

without science's aid; and that science probably held secrets which, if wrested from her, could continually add to the effectiveness of weapons, as time should go on.

Before the present war, the period of the most intense military activity in recent times was the twenty-one years from the Reign of Terror in 1793 till the Battle of Waterloo in 1815, sometimes called the Napoleonic period. During this period, Europe was engaged in a series of furious wars that were fought on the land and on the sea, the victories of Napoleon on the land and of Nelson on the sea being the most salient occurrences. In these wars, rapidity of movement seems to have been the most prominent, important, and determining single element. The physical and mechanical sciences had not yet begun that series of discoveries, inventions, and developments that have brought about what we all call "modern civilization"; and the weapons used, including the ships themselves, were of a simplicity that seems crudeness to us now. The musket of the soldier, and the siege gun and ships' carronade that were all slowly loaded at the muzzle, were the principal weapons. The ships were of wood, propelled by sails alone, slowly and uncertainly, according to the force and direction of the wind. Armies went from place to place by marching only, and their supplies and munitions were taken to them in carts that were dragged over uneven roads by horses.

After Waterloo in 1815 until the outbreak of our Civil War in 1861, the physical and mechanical arts made great advances, notably in the development of the steam engine and the electric telegraph; but their influence on the military arts was small. Cannon for siege and fortress purposes and ship use increased somewhat in size, and a few iron ships were built. But the musket and the cannon were still loaded at the muzzle, the movements of armies were mostly made by marching, ships were still made of wood and propelled by sails, though some had small steam engines, to assist the sails when the breeze was favorable, or to be used alone in contrary winds and calms.

Our Civil War brought many improvements into use, as was to be expected from the fact that it was fought between two sections of the most inventive people in the world. Troops were transported by rail and steamboat over longer distances and at greater speed than ever before; the telegraph was established in the field; signalling by flags was brought to a degree of perfection never before approximated; breech-loading cannon and muskets were made practicable, and "sharp shooting" by expert marksmen was inaugurated. These were the principal accomplishments on the land; it was on the sea that the greatest advance was made.

The advance began with the fitting out by the two opposing sides of two vessels of novel design and construction: the *Merrimac* by the Confederates, who called the ship *Virginia*, and the *Monitor* by the Federals. Of the two, the *Monitor* was the more original, the more advanced, and, as the issue proved, the more effective under the conditions under which the two vessels fought each other, and the more capable of subsequent expansion and development.

But the *Merrimac* was, nevertheless, a very radical improvement; and the fact that, three hours after she left the Norfolk Navy Yard, she sank the U. S. S. *Cumberland*, mounting twenty-four guns to her ten guns, and manned by 376 men to her 300, added to the fact that immediately afterward she engaged the U. S. S. *Congress*, carrying fifty guns and 434 men and punished her so badly that she took fire and burned to the water's edge; added to the fact that the *Merrimac* was practically uninjured after both encounters, shows that she was not only different from ships of previous designs, but very much more effective. The additional fact that the *Monitor*, carrying only two guns and forty-nine men, appeared the following day and defeated the *Merrimac*, or at least prevented her from carrying out the intention for which she was designed of laying Washington, New York, and the other coast cities under contribution, and of sinking the various ships of the Federal Navy, has blinded the world to the more important fact that a very great stride in

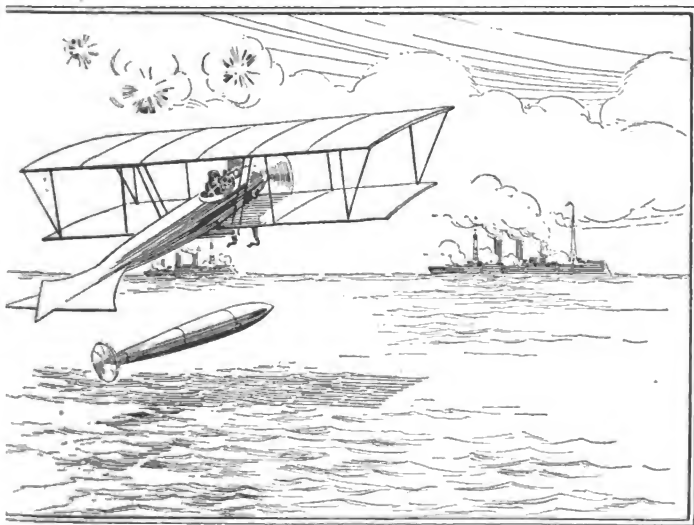
fare was made when the *Merrimac* came from the Norfolk Navy Yard to report News and engaged the Union vessels anchored there.

The *Monitor's* success in defeating the much-dreaded *Merrimac* caused a tumultuous joy in all the Northern states, especially those that bordered on the coast, which cannot be understood by any one not realizing the terror inspired by the accounts of her while building, and the threats of the deeds she was going to perform. The *Monitor* was acclaimed the greatest invention of the age, and Ericsson the greatest inventor. Other vessels, patterned after the original *Monitor*, with improvements suggested by experience, were speedily constructed; and they did effective service throughout the rest of the war, especially the attacks that the Navy and Army made on Confederate forts.

The success of the *Monitor*, with the resulting discomfiture of the *Merrimac*, has

of course been accepted as a fact. Not only this, it has been accepted as a thing natural and to be expected. But suppose that the *Monitor* had been put forward by the South and the *Merrimac* by the North! Such an idea is not absurd, because the Confederate navy showed fully as much originality and daring in the new appliances they brought out as did the Federal navy: note, for instance, their torpedoes and their "David"—the prototype of the submarine. If the *Monitor* had been put forward by the South, and the *Merrimac* by the North, what would have happened? Nobody knows exactly, of course; but the inference is unavoidable that the Confederate navy would have been able to prevent that strangling blockade of the Southern coast which was the most potent single element in the final overthrowing of the Confederacy.

Since our Civil War and until August, 1914, the principal wars from a military



AN AIRPLANE TORPEDO BOAT

The need of some new and effective method of waging war is one of the things that we have learned from the war. With this in view Admiral Fiske has devised a scheme for launching torpedoes from airplanes

standpoint were the war between France and Prussia in 1870 and the war between Russia and Japan in 1904. The war between France and Prussia brought out into startling distinctness the value of preparedness; preparedness not so much in material and in individual training as in strategy as applied to war upon the land. The war between Russia and Japan brought out into equal distinctness the value of preparedness in strategy as applied to war upon the sea.

As soon as the present war broke out, it was at once apparent that the lessons taught by the Franco-Prussian War, and emphasized by the Russo-Japanese War, had been firmly grasped and vigorously acted on by all the combatant armies and navies. It was plain that some new and distinguishing element of warfare might be expected—unless the war were to be destitute of novelties; and this was a thing hardly to be expected, since so many and so highly civilized nations had been preparing for the war for so many years.

What would it be?

Those of us who were on the lookout realized what would be its general character when we read the accounts of the howitzers of new design and unprecedented power, which threw enormous shells filled with large quantities of high explosive far up into the air, whence they fell with crushing effect on top of the Belgian forts.

Unless our information was incorrect, the form and the violence of this attack were a surprise not only to the Belgians, but to everybody else; for the very existence of the guns had been kept a secret. It had been realized that the value of any new method of attack depends on the inability of the party attacked to defeat it, and that this inability is great in proportion as the attack partakes of the nature of a surprise. The simplest and crudest kind of attack is apt to be successful, if the party attacked is taken by surprise. Of all the single elements in warfare, none has a better record of performance than surprise.

Soon, we read of the unprecedented development of machine guns in both numbers and efficiency; of the vastness that trench warfare was assuming; of the machines for digging trenches; of the

speed and thoroughness which those machines displayed; of the hundreds of miles of trenches made, and of the hundreds of thousands of men who fought in them. Then we read of the hitherto unheard-of apparatus and methods for destroying life by means of liquid fire; by means of asphyxiating gases; by means of novel hand-grenades and bombs. Then we noted that submarines were accomplishing results with an apparent certainty of operation and an amount of power which bore out all that the most enthusiastic advocates of the submarine had ever claimed, and at distances from home that were amazing. At the same time, we heard of the long and swift and sure flights of airplanes, and the precision with which they dropped their bombs; and soon we read accounts of battles in the air that illustrated Tenyson's famous prophetic vision. Then we read of Zeppelin forays, despatched across the North Sea from one country to another, and of their safe return. Then the world was startled by the sudden appearance of a commercial submarine, the *Deutschland*, in the waters of Chesapeake Bay. Then we read of the exploits of automobile "tanks," or little land battleships, that cruised over and about the trenches of the enemy; showing that land fighting is still following in one way the lead of sea fighting; showing that land fighting is continuously learning how to employ mechanism which can hold enormous units of offensive power concentrated and controllable in small spaces, and protected by thick armor, in addition to the little units of offensive power called muskets, which individual soldiers carry in their arms. And recently came the last surprise—an armed submarine that arrived one day from Europe, and on the next day sank five merchant ships just outside the three-mile limit that skirts our coast; just outside that invisible but critical line which separates the waters under the jurisdiction of the United States from the waters that are under no jurisdiction whatever, except such temporary military jurisdiction as the *U-53* had at that time, the jurisdiction granted to and enforced by him who holds "command of the sea."

A close view of these successes shows

us that, before the successes were military, they were mechanical; that, before the mortars had been able to smash in the tops of the Belgian forts, the various scientific and mechanical difficulties connected with their design, construction, and handling had been overcome; that, before the submarines and the "tanks" had been able even to start on the missions which resulted so successfully, they had been made to operate successfully as mechanisms.

Now, every one who has had even a distant connection with making any novel mechanism operate successfully knows the almost infinite patience required after the attempt has been begun; and every one who has been connected even distantly with inventing, or with getting any novel project tried, knows the distasteful and harrowing manœuvres that have to be performed in order to persuade the authorities to take the necessary steps, or to grant the necessary permission for taking the steps that are necessary before work can even be begun. Such a person remembers the objections of all kinds, good and bad, that are urged against doing anything at all, the inertia, the seeming unwillingness to be persuaded or convinced. Then he remembers, after the decision has at last been made, that the project or invention shall be tried, the diabolical ingenuity of all the material parts themselves, to keep from doing what the inventor supposed they would do, and what, by all the laws of nature, apparently, they ought to do. He remembers with pain the whole long course of experimentation, with its alternations of success and failure, hope and despair, as the various phases of development succeed each other. And the iron enters into his soul so keen and hot that the memory of the struggle is often keener than the memory of the subsequent success.

He remembers, too, that only a few of many inventions and new mechanisms tried were successes, and took their places as recognized entities of proved usefulness and value.

So, back of all the military successes that the new devices have accomplished, we must realize the heart-breaking struggles

that must have been made, in order to force and to persuade the devices to operate successfully; and, back of these struggles, we must realize the foresight which saw the value of those devices if they could be made to operate successfully, and the indomitable will which overcame the obstacles that stood in the way of their so doing.

THE NEED OF FORESIGHT AND WILL

The evidence of this foresight and this will seems to me to cast more light on the character of the present war than any other single thing. Hitherto, inventors have had to force their inventions on a resisting government; in this war, and for a short period before this war, the governments themselves, as represented by their navy and army officers, seem to have encouraged the inventors and, in some cases, to have pushed the inventors on, instead of being pushed on by the inventors. Everybody knows, for instance, that the Kaiser exerted all his power to encourage Count Zeppelin; and that he gave him all possible assistance, even though many discouraging failures marked the history of the air ship, and many people in high position scoffed at it. Everybody knows, also, that Admiral von Tirpitz did all in his power to push the development of the destroyer and the submarine, daunted by no obstacle, discouraged by no failure; and that he did not restrict his exertions to his own field of work, that of providing the material and the personnel, but extended it to insisting that not only should destroyers and submarines be built in large numbers, and fitted with every scientific adjunct, but that the personnel should operate them under the worst conditions of night and storm, in order that the personnel might become ready for actual war, and in order that the material should be such as had been tried under bad conditions, and found to be reliable. Everybody knows, besides, that the British officials have pushed the British inventors and manufacturers, instead of being pushed by them.

This phase of the preparation for the war, the inventing and developing of new inventions for the war, does not seem to

have been adequately apprehended, though every one has noted the conspicuous fact of the great use of mechanisms of all kinds. Probably, this is because so few who have studied the war have looked at it from the standpoint of the inventor. This war has put the inventor and his coadjutor, the designing engineer, on a far higher plane in the military world than they have ever been on before. A very few inventors in the past have done well for the military arts, and have been suitably recognized; notably Archimedes, Leonardo da Vinci, Fulton, and Ericsson; and so is Sperry now; but the number of men who have made and successfully developed inventions applying to the conduct of war is amazingly few, considering the widespread, intense, and long-continued interest of men in the military arts. The cause has not been any lack of conception of ideas by inventors of all classes, but rather a disposition on the part of navy and army men to discourage the trial of "freak" ideas. This is not because navy and army men are more stupid or conservative than other men, but simply because of the natural indisposition of men to do any work that does not seem necessary; to which may be added a natural reluctance to take suggestions as to things in their own profession from outsiders. This spirit is not at all a bad spirit in the main and is certainly founded deep in human nature, and seen in all vocations; for instance, in railroad men, in regard to inventions for improving railroads.

MORE INVENTIONS IN WARFARE TO COME

The war is not yet ended; and the fact of so many new devices having done so much successful work is a reason for feeling that some other new device or devices may yet appear. In fact, when we consider the feverish mental activity concerning military mechanisms, not only in Europe, but in the United States and other countries that make and send war material to Europe, the advent of some such thing seems to be highly probable. What will

be its nature, no one can tell: but he can exercise his imagination very interestingly in guessing. Will it be for land work, for sea work, or for both?

Of one thing, we may be fairly sure: that it will be a very novel device, the application of some new scientific discovery, or of some well-known scientific fact not hitherto made useful for military work. If it be for land work only, the chances are even that it will benefit either side more than the other, because the land forces seem to be quite evenly matched, and there is just as much reason to expect that one side will produce it as the other side. If, however, an important new device applicable to sea warfare should be brought out, as important and new as was the *Monitor*, it seems possible that it might aid one side more than the other.

WE MUST PRODUCE A GREAT INVENTION

The overwhelming advantage that can be secured by the sudden and unexpected interjection into a war of some new mechanism, and its use in actual battle before the enemy can learn how to oppose it, first assumed distinct importance in the events of our Civil War. It has assumed still greater importance in the present war, because of the greater importance that the scientific arts have now acquired. Inasmuch as the United States is the most inventive nation on the earth, and inasmuch as we may be threatened with a danger on the sea that we shall need all our resources to avert, the conclusion seems logical that we ought to try to supplement our present naval strength by some new invention or device that will do for us now what the *Monitor* did.

This seems to be the most important hint to us that is given by the present war. How important it is, we do not know; but we can estimate its importance by noting the damage that a superior hostile fleet could inflict upon us, and realizing that we were saved from the danger of a similar damage by the *Monitor*.

PAYING OFF THE MORTGAGE ON THE UNITED STATES

WAR PANIC, AND EUROPE'S RUSH TO BUY OUR GOODS

THE CLOSING OF THE STOCK EXCHANGE, THE RISE AND FALL OF THE ENGLISH POUND
STERLING, THE AVALANCHE OF WAR ORDERS, AND THE PART THAT
MORGAN AND MORGAN'S MEN PLAYED IN THE DRAMA

BY

ALBERT W. ATWOOD

UP TO the final moment of the launching of ultimata between the European governments," says the official history of the New York Stock Exchange in the crisis of 1914, "no one thought it possible that all our boasted bonds of civilization were to burst overnight and plunge us back into medieval barbarism. On that eventful date (July 31, 1914) a financial earthquake of a violence absolutely without precedent shook every great centre of the civilized world, closing all their markets one by one."

To-day, with this country fairly weltering in financial good fortune, we must rub our eyes to reconstruct an image of the dark and terrifying events of two and a half years ago.

For a week the New York market stood its ground wonderfully in the face of total suspension of all other world markets. From panic-stricken speculators in every country in Europe came an avalanche of American stocks. In that single week nearly \$42,000,000 in gold was engaged for export from New York to Europe. Exchange on London rose to \$7—a rate never before witnessed; the Bank of England put a practical stop to all English trade by raising its official discount rate to 10 per cent., and an immediate run on that institution resulted in a loss in gold of \$52,500,000; its ratio of reserves fell from the low figure of 40 per cent. to the paralyzing point of 14½ per cent.; and the surplus

reserve of the New York City banks dropped off \$50,000,000. Risk of shipment by sea, together with the ruinous advance in exchange upon London and the frantic uprush of shipping and insurance rates, suddenly brought international trade to a full stop.

These events, coming as lightning out of a clear sky, drove the American public into panic, and on the evening of July 30th and the morning of July 31st the offices of brokers were flooded with orders to sell stocks for what they would bring, regardless of value.

On the following morning, Mr. J. P. Morgan issued a hopeful and prophetic statement in which he said:

Alarming as the news is from Europe, I am still hoping there will not be a general war. The situation of the American security markets during the past two days has been a splendid illustration of the inherent soundness of financial conditions in this country. While we all earnestly hoped that the New York Stock Exchange might be kept open, the situation is fraught with so much uncertainty that it seemed necessary in the interests of the whole country to close the Exchange.

It is essentially a time for the owners of American securities to keep their heads. Bear in mind that the actual properties represented by American securities will not suffer greatly by a European war. During the past few days the American people have been buying back American securities at low prices. Presumably they will pay for those securities with their wheat and other products at high prices.

Despite these reassuring words, the panic continued. "In all previous panics," says the official chronicle of the Stock Exchange, "the foreign world markets were counted upon to come to the rescue and break the fall. Imports of gold, foreign loans, and foreign buying were safeguards which in past crises had been counted upon to prevent utter disaster. On this occasion our market stood by itself unaided; an unthinkable convulsion had seized the world; panic had spread, even the bargain hunter was chilled; there were practically no buyers; . . . on August 4th, a delegation of houses dealing in securities for European account appeared and stated that approximately \$40,000,000 to \$50,000,000 of securities were to arrive 'this week, beginning to-morrow.'

"A half hour's session of the Exchange that morning would have brought on a complete collapse."

So they closed the Stock Exchange for four and a half months. Dealers in "unlisted" or "outside" securities were persuaded to close up shop. Even public auctioneers were not permitted to sell stocks. Savings banks fell back upon the legal provision that in times of panic they need pay deposits only upon sixty days' notice. Bankers had to avail themselves of the so-called Aldrich-Vreeland emergency currency, an expedient never before resorted to. Finally, the banks fell back upon the old panic expedient of issuing Clearing House certificates.

OUR PRE-WAR DEBT TO ENGLAND

Mr. David Lloyd George, then Chancellor of the British Exchequer, told the House of Commons that the United States owed Great Britain \$5,000,000,000 and couldn't pay the part then due. The whole paper machine of civilization had broken down, he said. For months bankers and financial authorities in this country were obsessed with a terror of what would happen if the Stock Exchange should open and foreigners attempted to convert into money to use in the war their billions of dollars of American securities.

For, besides bonds and stocks, this country owed to Europe, and chiefly England, about \$370,000,000 on demand,

besides \$80,000,000 of short-time paper of the City of New York. Great Britain looked for these obligations to be paid as they matured.

THE POUND STERLING SKYROCKETS

So the British pound sterling, normally worth \$4.86, came to have the preposterous value of \$6 and even, for a short period, \$7. European governments declared moratoria, thus seeming to free their citizens from paying debts abroad while demanding that all remittances to them should be promptly met. But more important was the sudden withdrawal of all shipping, and the consequent railroad embargoes on grain and cotton shipments, with a resulting dearth of commercial bills. Experience had shown that whatever balances might be created against us in the summer months would be offset by the grain and cotton shipments of the fall, but now there were no such shipments to rely on.

American bankers were surrounded by new and bewildering difficulties. But they rose to the challenge. First they attacked the problem of New York City's indebtedness of \$80,000,000 of "warrants." These warrants were short-term notes maturing between September and January and were payable in gold in London. Ordinarily they would have been met by discounting in New York the bills of American creditors of London merchants. But to safeguard the credit of America, the bankers of New York knew they must prove their ability to pay in gold. So, under the leadership of J. P. Morgan & Company, and with the coöperation of Comptroller Prendergast of New York, they formed a "pool" of all the banks in New York, each subscribing pro rata on the basis of their gold reserves, and raised the money in actual metal to pay the warrants, shipping the gold to Ottawa instead of London. So dramatic was this proof of our financial power that less than half the gold was actually called for: and it steadied the whole financial situation as nothing else could have done. Then the bankers raised a \$150,000,000 cotton pool and a \$100,000,000 "gold" pool to care for such maturing foreign obligations as did not come under the head of the other two.

These measures gradually restored con-

dence. American finance recovered its nerve, and financial panic abroad came to an end, for the governments assumed private debts and issued vast quantities of new money. Soon the Allies secured command of the sea, and although shipping and marine insurance rates were still exorbitant it became possible to resume overseas trade. Cautiously and gradually the Stock Exchange began to open its doors, but not until April, 1915, did it remove every restriction. For a long time there were "minimum" prices, to prevent foreigners from dumping securities for whatever they would bring. Then the idea began to spread that with a long and costly war Europeans would prefer to retain the best of their American investments, to keep some element of wealth outside the European maelstrom.

In January, it was learned that our December exports of foodstuffs had been phenomenal both as regards quantity and price. It was realized that in a long war millions of farmers and artisans would be withdrawn from the fields and factories of France, and yet must be clothed and fed and armed. Foodstuffs continued to go abroad in huge amounts throughout the first three months of the year, and by April immense orders for munitions of war were being placed in this country, the first large order being for \$83,000,000. In March, stocks began to boom, and by April business depression and unemployment were melting away. From month to month American exports soared, and our trade balance reached an unprecedented size. Including products of indirect military value such as foodstuffs, metals, wool, and cotton, along with obvious military articles, exports for the year ending June, 1914, were \$825,000,000; for the year ending June, 1915, \$1,562,000,000; and for the same twelve-month period ending June, 1916, \$2,771,000,000.

HOW AMERICA'S MORTGAGE WAS PAID

The change had come with the rapidity of a moving picture, almost like the sudden and unexpected shifting of a dream. In the January *WORLD'S WORK* I drew, with some detail, the black prospect that faced this country when the war began.

Since then we have paid off \$450,000,000 of demand obligations, have drawn in some half billion dollars in gold, have bought back at least \$2,000,000,000 of our own securities, and have purchased about \$2,000,000,000 of foreign securities. That is, we have paid off a mortgage, roughly speaking, of five billions of dollars.

Such a transition has never been known before. It is a migration of capital of such consequence that the whole aspect of world trade and financial preëminence has been revolutionized. Of course, it has been made possible only by Europe's ravenous need for supplies to carry on the war, but that does not change the marvel of the thing itself. It does not detract from the significant character of the events which marked this transition, nor from the achievements of the men upon whom has fallen the task of directing this unusual movement.

THE HEGIRA OF BUYERS TO AMERICA

After the war had been under way for a few months it was apparent that the needs of England, France, and Russia were far in excess of the manufacturing facilities of those countries. Munitions of war must be had as quickly as possible and the Allied countries naturally turned to the United States. Foodstuffs, horses, and mules could be shipped immediately; manufactured articles could follow. Buyers for the Allies began to pour into the States. They came in commissions and individually, openly and secretly, with awe-inspiring credentials and without any; some were men of notable ability and discretion, possessing great authority; others were mere adventurers.

American manufacturers had been whistling to keep up their courage. Profits throughout the country were at a low ebb. Soup kitchens and public charities overflowed with applicants. With almost startling abruptness appeared hundreds of purchasers possessing unlimited credit and willing to pay unheard-of prices. To say that manufacturers seized the opportunity is to repeat what happened so mildly that it hardly tells the story at all. Almost every mechanic with a lathe and every clerk with a can of coal tar set up

as a munition, dye, or chemical maker. The foreign buyers seemed in a panic to place contracts. They bid against one another and fairly trampled on one another. One foreign government placed orders for a certain chemical for exactly five times the entire possible production of the country. Within a few months the market for all munitions of war was in a state of indescribable chaos.

"WAR BROKERS," SELF-STYLED

Confusion was increased by a sudden rushing into the business of irresponsible speculators who styled themselves "war brokers." The tales of orders at fancy prices for sixty and eighty million dollars' worth of shells, cartridges, machine guns, rifles, explosives, chemicals, cotton and woolen goods, horses, mules, foodstuffs, machinery, and new inventions stirred the cupidity of men who knew nothing about the business and had no connections or resources that entitled them to enter it. Short of cash but long of nerve they dogged the heels of foreign buyers. One retired business man actually spent \$30,000 to finance a dozen or more of these alleged brokers and to fit out offices for them, expecting to share their profits. "Exchanges" of "war brokers" were organized in considerable numbers. One concern with a fancy name including the word "international" pretended to have branches in London, Paris, Petrograd, Geneva, Sydney, Berlin, Rome, Lisbon, Montreal, Valparaiso, Christiania, and Port Said.

SPENDING BILLIONS FOR THE ALLIES—

If the Allies had continued their purchases under these early conditions they might have been ruined financially and it would have been impossible to secure the quantity or quality of munitions needed. So they conceived of the bold and daring but simple idea of placing all this purchasing in charge of a single, dependable American firm, J. P. Morgan & Company. Announcement to this effect was made early in 1915. Mr. Edward R. Stettinius, president of the Diamond Match Company, was engaged to organize the work.

Into the quiet, almost solemn banking parlors, Mr. Stettinius brought literally

hundreds of assistants, experts, secretaries, clerks, and stenographers. How extensive his purchases have been in the two years since the work was organized cannot be stated exactly. The figures are known only to the Allied governments and to J. P. Morgan & Company. But the world has never before seen such a vast purchasing department. Upon the smoothness, efficiency, and success with which it has operated has depended, it is not too much to say, to no small degree the very life of France and of the British and Russian Empires.

Statement has been made that during the first year of its operation this buying department of J. P. Morgan & Company purchased about \$100,000,000 a month, or \$1,800,000,000 during 1915 and part of 1916. The writer has reliable authority for stating that in one class of war munitions alone the purchases amounted, late in 1915, to a million dollars a day.

—AND THE MAN WHO DIRECTS IT

Into the massive portals of the stately and ponderous marble pile at the corner of Wall and Broad streets has marched for the last two years an almost unbroken procession of manufacturers and their agents, brokers, and salesmen. Here, literally, is the busiest spot in America. Mr. Stettinius, a man just past fifty, was picked for his powers of organization and ability to work. Two corporations, Babcock & Wilcox and the Diamond Match had been his life work. Both he had built up from adversity to prosperity. To J. P. Morgan's he brought knowledge of men, of organization, of countless business processes and an immense power of personal drive. Late hours and long days of incredibly hard work have had no terrors for him or for his competent assistants. For upon Mr. Stettinius and a very few of the first line of his assistants, like Mr. Waddill Catchings, formerly president of the Central Foundry Company, has fallen the task of actually dealing with hundreds of manufacturers and spending up into the billions of dollars.

The size of these orders created conditions without precedent. Articles which at first sight might seem unimportant

like cotton webbing for belts for British soldiers, had to be bought in quantities far exceeding the total normal production of the country. And even after Morgan & Company took charge, the elusive "war brokers" did not cease their operations. Most numerous at one time were those who pretended to have "spot" cartridges, that is, cartridges for immediate delivery. Curiously enough, most of these "brokers" offered 1,400,000,000 cartridges. That seemed to be the favorite amount, and speculator after speculator would wend his way to the top floor of the building, where the purchasing department has its offices, with the glad tidings of immediate delivery. But when asked to present a list of manufacturers they became suspicious and reticent and usually said they would go out and come back within fifteen minutes. In such cases they never returned.

Some day the absorbing story of how these billions of dollars' worth of goods were bought in the most economical manner possible will be told in full. Now it can only be hinted at. In dealing with irresponsible speculators it has been necessary to avoid giving them any verbal or written word to the apparently innocent effect that the goods would be taken if satisfactory. For the speculator would immediately rush to a bank and borrow money upon that promise of J. P. Morgan & Company, and then would be in a position to talk business to some manufacturer. Naturally, the more go-betweens the higher the ultimate price would be to the Allies.

So the buying agents always get as close as possible to the actual manufacturer to avoid unnecessary commissions. They seek to know what plants are turning out the goods, the capacities, specifications, and financial backing to fulfil the contract. But even when dealing with reputable and competent manufacturers the buying agents had to employ sagacity, skill, and tact of the highest order. If, for example, it became known to the manufacturers that the agents were in the market for one

million gallons of a certain chemical, which might be more than the entire production for six months, the manufacturers, with intense inward joy, would whoop the price up to excessively profitable heights. But Morgan & Company have never bought that way. Orders have been fed out gradually, in small amounts at any one moment and to any one manufacturer. Brains of the highest order have been employed in devising buying methods which concealed the total ultimate purchases. Thus stupendous sums have been saved.

Having once solved the problem of how to buy munitions of war and foodstuffs as cheaply and skilfully as possible, British statesmen and financiers set themselves to face a new embarrassment, the supreme question and crux of British war finance. This was the maintenance of the pound sterling. For as British imports mounted sterling exchange began to suffer. Whereas at the beginning of the war it had been a question of rehabilitating the American dollar, it now became a vital necessity to rehabilitate the British pound. Under the steadily growing weight of an adverse trade balance British money sunk until, in August, 1915, a panicky drop to \$4.48½ took place, the lowest point at which the pound sterling had ever sold as compared with the American dollar, and equivalent to a discount of 8 per cent.

AMERICA LENDS ENGLAND \$500,000,000

To buy billions of dollars' worth of goods in a rapidly depreciating currency would have been disastrous. So a British and French commission came here in September, 1915, with the avowed intention of borrowing \$1,000,000,000. If they could set up such a huge credit in the banks of this country it would only be necessary to write out checks in payment for war supplies, instead of resorting to the intricate mechanism of foreign exchange that fluctuated so violently with the various tides of trade.

[In the next, and concluding, article Mr. Atwood tells the dramatic story of how Great Britain gathered the American securities owned by its citizens and pawned some and sold others in the United States to pay for war supplies—and how, in consequence, the United States paid off the larger part of its colossal mortgage in two years.]

HOW MUCH FRESH AIR CAN A WELL MAN STAND?

BY

CHARLES PHELPS CUSHING

TO MAKE sure that this series of articles shall be authoritative, the *WORLD'S WORK* has arranged to have them reviewed and approved by the Life Extension Institute before they are published.

The Life Extension Institute was organized by well-known scientists, publicists, and business men as a semi-philanthropic enterprise to disseminate the knowledge of healthful living among the people. Ex-President Taft is president of the Board of Directors, and its professional advisers include some of America's most distinguished physicians and surgeons, as well as the most prominent educators. The Institute's approval of these articles, therefore, assures their scientific character.

NEARLY everything that the average layman thinks he knows about "fresh air" has to be severely edited and blue-penciled before it can pass the censorship of modern medical science. The layman who is "sure of his facts" about oxygen and ozone, ventilating systems, deep breathing, and kindred topics, usually is a partisan either of the red-corpuscle school or of the sealed-window faction. Neither camp has the unqualified endorsement of science.

The red-corpuscle fellow slaps you on the back, throws up all the windows in the room, and declaims that the short cut to health is to drink deep draughts of "Nature's glorious ozone." He has statistics at hand upon how many cubic feet of air the average breather "consumes" in an hour and how much "poisonous" carbon dioxide his lungs will exude in that period.

The man from the other camp contemptuously brands this doctrine as discarded tommyrot. He slams the windows shut again, turns off the radiator, and stirs up the air with an electric fan. Deep breathing, he explains, is nothing but a fad. The matter of prime importance, he contends, is to see that the air is fairly cool and is kept on the move.

The quasi-experts who have breathing systems and little popular handbooks on ventilation to sell appear to be as partisan

and as decided in their views as the know-it-all layman, so a reporter, seeking solid, unprejudiced information on the subject, may at first find the situation rather baffling. But when he appeals to real experts on hygiene his difficulties will begin to clear up a bit. Then it will become apparent that both sides to the controversy are partially right and partially wrong, and that the best informed investigators, though they have a great deal to report, do not state their conclusions as dogmatically as the layman.

Because he has the gift of being able to talk to the public in the public's own tongue, I went first to Dr. Louis R. Weltmiller, of the West Side Y. M. C. A. New York City, with an appeal to start me on the right track. A newspaper clipping set the interview going. It was headed: "A Breathing Fad Opposed," and its subtitle was: "'Lungs self-regulating when air is pure,' says a prominent physician."

Dr. Weltmiller read the clipping through and, somewhat to my surprise, nodded approval. This is what it related:

"A widely known physician remarks that there is as much nonsense in the 'deep breathing fad' as there is in food fads. Deep breathing really is beneficial, but not in the way most persons suppose. The common notion, inculcated by exponents of the big chest and 'red blood' gospel, is that the more air you

take into your lungs the more oxygen you get into the blood, thereby increasing the health of the whole physical organism. The function of the lungs, of course, is to burn up the impurities in the blood, [an inaccurate statement] and oxygen is the chemical agent in that process. The impurities pass off as carbonic acid gas. But the fallacy, says the physician, consists in the assumption that the lungs can be made to do more work.

"As a matter of fact, he says, the lungs do their own chemical regulating, and use only as much oxygen as they see fit, regardless of what their owner may desire. 'One cannot increase the amount of oxygen in the blood or decrease the amount of carbonic acid gas one bit by deep breathing.' The lungs always contain more oxygen than they can use, even in the shallowest breathing—provided, of course, the air is sufficiently pure.

THE ONLY VALUE OF DEEP BREATHING

"The chief advantage in deep breathing is to help circulation. The pressure of air in lungs filled to their capacity drives some of the blood out of the trunk into the limbs, and warms the hands and feet if they are cold."

Except for the inaccurate statement that the function of the lungs is to "burn up" impurities in the blood, Dr. Welz-miller said that the clipping was a fair enough account of the truth about deep breathing. The average dwelling or office is well enough supplied with oxygen for our needs; and it is a fact, to the best of scientific knowledge, that the chief value of deep breathing lies in stimulating circulation rather than in augmenting the consumption of oxygen. The doctor put the case this way:

"It isn't going to do a motor car's engine any particular good to feed it more gas than the speed and the grade require. The same holds true for the self-regulating mechanism of the lungs. Generally speaking, the breathing apparatus will demand deep breaths in proportion to the exercise you give your body. Merely pumping the bellows isn't going to force oxygen into the tissues unless work creates a demand for it.

What good to lead a horse to water if he doesn't want to drink?

"I suppose you know that oxygen and the extra strong brand of the same commodity known as ozone have fascinated the public for a good many years and that the scientific sound of the words has been the source of riches to many a fakir. This is because the public never has taken the trouble to find out some of the facts that medical science knows. Now you can't pump oxygen into your blood from a tin can through a wire and the clasp of a patent garter. Neither can you pump extra quantities of it into your blood via the lungs unless activity creates an extra demand. But when there is a demand for it the chances are a million to one, in the city as well as the country, that the lungs will get all the oxygen that they require.

"I have known city men, hundreds of them, who had a firm conviction that one of the greatest obstacles in their way to becoming healthy lay in the fact that city air has less ozone in it than the air up-state or at the seashore. True, the air down there by the sidewalks of Fifty-seventh Street would not assay quite as high in ozone as that in the Catskill Mountains—but the difference chemically is so slight that it isn't worth talking about. You will find, as you go digging into the facts about the air we breathe, that the oxygen phase is almost negligible as compared with some more important matters such as that of the stagnation of the air, the humidity of the air, and its temperature. On the mere score of oxygen there is no need for any one to pity the city men in this enclosed gymnasium as he contrasts their lot with that of a farmer. They are getting all the oxygen they require, and so long as we keep the temperature of the room low, keep the air in motion, and see that it isn't overhumid they will be as well off as anybody. And I venture that the fellows up on our roof playing handball are breathing air which, for all practical purposes, is as pure as any in the mountains.

"Now what I am driving at is this: Part of the stimulating effect of living in the country is psychological, from

pleasant surroundings which stimulate one to feel healthy and cheerful. These are far more important in their influence than the extra mite or two of ozone in the air. In the same way, part of the depressing effect of city life is psychological. The air of the city, even in crowded places, isn't anywhere near as 'devitalized' as is generally supposed. The city man should not blame the city air so much as he should blame the way he conducts himself. He usually is as healthy as he deserves to be."

DRESS TO SUIT CONDITIONS

As a test case of the application of the theory I asked the doctor to suppose he were dealing with a subordinate in a bank. The place where this man works is, like most banks, usually overheated. He is a subordinate who wouldn't dare attempt to control the ventilation of his office. How can he make the best of such unhealthy conditions?

"If he is spending his working hours in a July atmosphere he ought to dress for those summer conditions," the doctor answered. "He should not wear heavy, air-tight woolen underwear and a heavy winter suit. A warmer overcoat will serve to protect him when he goes out into the cold. But, of course, use a little common sense in breaking in—don't take the plunge into lighter clothes all of a sudden and blame me for making you come down with pneumonia. Also, remember that frail, anemic persons can't afford to dress as lightly as full-blooded folks. Warm outside wraps—but this doesn't mean bundling up. Instead of swathing your throat in a muffler and turning up your collar, get used to winds. A cold sponge in the morning over your neck and chest will help harden you to exposure. A glass of milk or malted chocolate may be a good stimulant before going home and prepare your stomach for the evening meal. To go home, 'tired all over,' and eat a heavy evening meal, when your stomach is quite as tired as the rest of you, may do you more harm than all the bank's 'bad air'—which probably isn't half so bad as you imagine. The ill-health which you blame on 'bad air'

may be, rather, your own fault from lack of sufficient exercise. A little activity on your part—and ten minutes a day may suffice if you get it *every day* and make it brisk—may put you on your feet.

Seeking further evidence about the bank clerk, I laid his case before Dr. Eugene L. Fisk, director of hygiene of the Life Extension Institute. The doctor had had such cases before, he said. The institute once found among a trust company's employees that nearly every man in the first group examined had a temperature above the normal and a slight skin rash. An inspection of the room in which they worked revealed that the air the men were breathing was stagnant and overheated. A window-board which furnished a slight circulation was installed. After that the examiners found no more high temperatures and no more rash.

"The skin," Dr. Fisk commented, "is more affected by bad air than are the lungs. Air supply and ventilation are believed by most of the scientists nowadays to be problems in physics even more than in chemistry. We used to value 'fresh air' for the oxygen or ozone it supplied to the lungs, and condemn 'foul air' because of the carbon dioxide or other alleged impurities cast off by the lungs. But to-day we regard the oxygen element as a matter of very small importance for under ordinary living conditions we never have a deficient supply of it. Neither do we often encounter a large enough amount of carbon dioxide to affect the condition of the blood. As for ozone, which is simply a big brother of oxygen, we know that when it is present in sufficient quantity to kill a microbe it will also prove strong enough to be harmful to our bodies. We have seen that human beings can live, apparently without suffering any ill effects, in an atmosphere so deficient in oxygen that the subjects of the experiments could not make a match burn. No, your bank man need not fear; he is going to get less oxygen than he requires!"

Dr. Fisk was not dogmatic in his statements, and he cautioned that the last word on the subject has not yet been said. He did not for a moment

deny that what we call "bad air" exerts a bad influence upon the man who breathes it; nor would he admit that the results of recent scientific experiments were such as should shake our faith in "fresh" air.

In his own office, I noted, Dr. Fisk had window-boards to supply a certain amount of cool air from outside, and an electric fan at half speed was going, too. As occasional changes in temperature are a good thing rather than a bad, he advises opening the windows a couple of times a day and "flushing the place" with new air. He doesn't laugh at the man who walks home from work with his head up and taking full breaths of fresh air, for "although the oxygen matter about which he is so concerned is negligible, this fellow is getting real results—exercise, stimulation to the skin, better circulation, benefits that go with a good carriage of the body, and a generally brighter outlook on existence." Dr. Fisk approves, too, of the sleeping porch, the window-tent, and open windows at night:

"By all means, sleep out of doors if you can, but see to it that you sleep well protected and comfortably warm. There is no merit in cold feet or in a frozen nose. On the other hand, a heavy mass of impervious bed clothing may neutralize the good effect of fresh air. A window-tent, covering the whole body, is a good compromise with outdoor sleeping, and it costs nothing to open your windows at night and secure adequate play of air around your body."

THE HARMFULNESS OF RESPIRED AIR

In the course of interviewing and reading up on fresh air, I kept coming across references to the work of the New York State Commission on Ventilation and to Prof. Frederic S. Lee, of the department of physiology of Columbia University. Besides being a member of the Commission, Professor Lee has carried on many independent investigations directly concerned with our present topic. He granted me an interview in his laboratory.

According to Professor Lee, "we now know that, except under very unusual circumstances, the harmfulness of re-

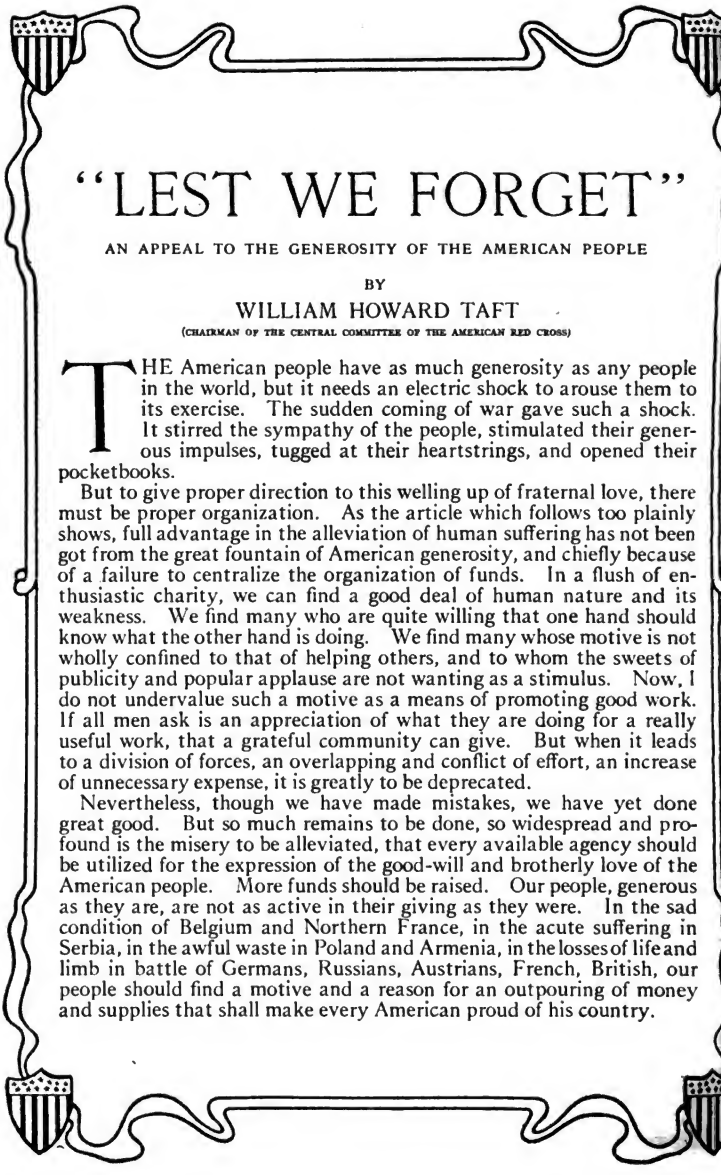
spired air is not due to its chemical components." He gives just as little consideration to the popular fears of "crowd poison" and the supposed harmfulness of carbon dioxide as he does to the popular notions about "oxygen starvation." He cuts a long story short in this fashion:

"By respiration oxygen cannot be reduced to a deleterious proportion nor can carbon dioxide be produced in deleterious quantity, except under very unusual conditions of living; and the organic poison of respiration has no real existence. The harmfulness of living in confined air is found in certain physical rather than chemical features—the air is too warm, too moist, and too still; and if it has not these physical features it is not harmful."

Do not suspect that the reporter has been guilty of misquotation. The statement is copied, word for word, from a paper that Professor Lee read last summer before the American Pediatric Society. He further attests that, "there are many reasons for believing that the danger of infection through germs freely floating in air or attached to particles of dust has been much exaggerated. It is, indeed, not rare now to treat cases of different infectious diseases within the same hospital ward. The one place of possible danger is in the immediate vicinity of a person suffering from a disease affecting the air passages, the mouth, throat, or lungs, such as a 'cold,' or tuberculosis."

Please note that this is not to say that you may as well keep your windows sealed and live in warm, stagnant air. The scientist commends you to seek the fresh air and avoid the bad, but he asks you, first of all, to try to understand clearly what the real merits of fresh air are—what you have to seek and what you don't have to seek, what you should fear and what you need not fear.

Scientists keep contributing new data to our knowledge of the effects of atmospheric conditions on mankind, but no authority, as yet, pretends that all the facts have been uncovered. Luckily, the points that are still in controversy are not of a nature to affect the layman's everyday course of conduct.



“LEST WE FORGET”

AN APPEAL TO THE GENEROSITY OF THE AMERICAN PEOPLE

BY

WILLIAM HOWARD TAFT

(CHAIRMAN OF THE CENTRAL COMMITTEE OF THE AMERICAN RED CROSS)

THE American people have as much generosity as any people in the world, but it needs an electric shock to arouse them to its exercise. The sudden coming of war gave such a shock. It stirred the sympathy of the people, stimulated their generous impulses, tugged at their heartstrings, and opened their pocketbooks.

But to give proper direction to this welling up of fraternal love, there must be proper organization. As the article which follows too plainly shows, full advantage in the alleviation of human suffering has not been got from the great fountain of American generosity, and chiefly because of a failure to centralize the organization of funds. In a flush of enthusiastic charity, we can find a good deal of human nature and its weakness. We find many who are quite willing that one hand should know what the other hand is doing. We find many whose motive is not wholly confined to that of helping others, and to whom the sweets of publicity and popular applause are not wanting as a stimulus. Now, I do not undervalue such a motive as a means of promoting good work. If all men ask is an appreciation of what they are doing for a really useful work, that a grateful community can give. But when it leads to a division of forces, an overlapping and conflict of effort, an increase of unnecessary expense, it is greatly to be deprecated.

Nevertheless, though we have made mistakes, we have yet done great good. But so much remains to be done, so widespread and profound is the misery to be alleviated, that every available agency should be utilized for the expression of the good-will and brotherly love of the American people. More funds should be raised. Our people, generous as they are, are not as active in their giving as they were. In the sad condition of Belgium and Northern France, in the acute suffering in Serbia, in the awful waste in Poland and Armenia, in the losses of life and limb in battle of Germans, Russians, Austrians, French, British, our people should find a motive and a reason for an outpouring of money and supplies that shall make every American proud of his country.

HAS AMERICA REALLY BEEN GENEROUS IN WAR RELIEF?

THE TRADITIONAL GLORY THAT WAS AMERICA'S, AND THE COMPARATIVELY INSIGNIFICANT PART WE HAVE PLAYED SINCE AUGUST, 1914, IN LIVING UP TO IT

BY

JOHN A. CRAIG

A LITTLE homespun lady timidly opened the door of the Serbian Relief Committee in New York. "I wish to send three flannel nightgowns to Serbia," she quietly announced. "How shall I do it?" It was a busy morning for the secretary of the Committee, Miss Hastings, but she turned from her work and answered the question in detail. As she was finishing, the visitor placed in her hand a crisp bit of paper. The secretary forgot to breathe when she examined it. It was a \$1,000 bill.

Later in the morning, the secretaries of two other war relief committees were called upon by a little homespun lady to explain the process of sending three flannel nightgowns to the stricken peoples they were organized to help. In each instance the interview terminated exactly as the first—at each place she left a \$1,000 bill. . . .

For two years and a half, through the mediums of 100 or more relief organizations, America has been venting its sympathy for the sufferers in the war-ravaged half of the world. The methods and the manners resorted to by the endless complexity of committees and sub-committees in mobilizing the generous impulses of the Nation seem to have been limited only by the resources of human ingenuity. The mails have been flooded with appeals, personal letters and stereotyped circulars. There have been "tag days," "button days," "flag days," and house-to-house canvasses; bazaars, dances, concerts, "afternoon teas," bridge parties, all manner of social gatherings, without number; church collections—the Federal Council of the Churches of Christ in America, representing a constituency of thirty religious

denominations, has repeatedly urged 80,000 pastors to bestir the sympathies of 18 million church members for the war sufferers, thus reaching perhaps 35 million of the population; Pope Benedict, through Cardinal Gibbons, has likewise appealed to the 16 million Catholics in America, encouraging emulation by his own gifts.

There have been proclamations by President Wilson, designating certain days to special activity in the collection of funds for various kinds of war relief. There have been theatrical performances, professional and amateur, lectures by war correspondents depicting Europe's misery, public "sympathy" meetings at which collections have been taken. Newspapers and magazines have printed conspicuous appeals for war relief free of charge.

On street corners, at the entrances to subways and elevated railway stations—in places where pedestrian traffic is heavy men and women have besought you with mite-boxes; in business offices, in the department stores, everywhere, cards adjure you to help buy eyes for a blinded soldier, milk for a starving baby, clothing for freezing non-combatants, whatnot. Sewing clubs to provide clothing for war sufferers are without number. "Chain-letters" have been resorted to in many instances by persons whose charitable sentiments have been more profound than their knowledge of the federal postal laws. One of these letters, soliciting twenty-five-cent donations, traversed the country from ocean to ocean and even crossed the Canadian border. It resulted in an ambulance being sent to France and a subsequent investigation by the postal authorities.

For what, for whom of those embroiled

in the European inferno, have been these activities of two years and a half in the Nation that is traditionally the most benevolent in the world?

In no country affected by the war has the work of relieving the distress caused by it been developed to such a remarkable degree of businesslike efficiency as in Belgium. The Commission for Relief in Belgium has, in a broad sense, been acting for the exiled Belgian Government at Le Havre. At the head of it is a remarkable organizing genius, Mr. Herbert C. Hoover, an American mining engineer. Substantially Mr. Hoover assures the Allied and Teutonic Governments that all relief supplies entering Belgium from the outside shall be given only to the Belgian civilians; and upon the faith of these Governments in the word of Mr. Hoover and his associates the existence of the Commission for Relief in Belgium has depended since October, 1914. The German occupation of the provinces of Northern France created an additional field of approximately two-thirds the area of Belgium and left a population of about 2,125,000 to be taken care of through the medium of the Commission.

WHAT WE HAVE DONE FOR BELGIUM

Unprecedented as the volume of the outside world's charity to Belgium has been since the outbreak of the war, it has not, of course, been anywhere near sufficient to feed, clothe, and house approximately seven million hungry, largely destitute and homeless people. The financial burden has fallen upon the Belgian Government at Le Havre. On November 1, 1916, \$108,121,358 had been spent on Belgian relief through the Commission in government subventions. Of this sum the British Government has, since February, 1915, been advancing monthly payments of \$2,500,000 (the monthly payment has recently been raised to \$5,000,000), and French financial institutions have been furnishing monthly sums of \$2,000,000. For relief in Northern France the Commission received, up to November 1, 1916, \$66,155,501 in subventions from the French Government. The private charity of the world for Belgian relief mobilized by the Commission

on November 1, 1916, amounted to \$23,503,771. Of this, in clothing, food, and supplies, the United States gave \$8,747,138. Of the other relief organizations in this country, the Belgian Relief Fund, of which the Belgian priest, the Rev. Father J. F. Stillemanns, is head, had collected, up to the first week in December, approximately \$1,121,000.

The total in governmental subsidies and charity received by the Commission, up to November 1st, was \$201,782,076. Some insight on the businesslike manner in which these funds have been handled may be had from the fact that the Commission netted a profit of \$22,619,273 from the sale of food in Belgium to persons who could afford to pay for it. The selling of food has been done at the suggestion of the buyers themselves, and the resulting profit has been used in the relief of destitution.

FOR THE FRENCH SUFFERERS

America's bond of sympathy with France is reflected in the number of committees in this country organized separately to help practically every kind of French war suffering. The names of many of these indicate the purpose of their organization. Among them are the following: American Chirurgical Mobile, American Ambulance Committee supporting the American Ambulance Hospital in Paris, Fund for French Wounded, American Committee for Training in Suitable Trades Maimed French Soldiers, American Girls' Aid for Destitute French Civilians, American Hostels for Refugees, Appui Aux Artistes de Paris, Committee for Men Blinded in Battle, Franco-American Committee for the Protection of the Children of the Frontiers, Fraternité des Artistes, French Tuberculosis War Victims' Committee, French Heroes' Fund, French and Belgian Artists' Fund, Fund for the Relief of the Women and Children of France, La Fayette Fund, Orphelinat des Armées (Fatherless Children of France), National Surgical Dressings Committee, Secours Duryea, Secours National, etc. etc.

Long ere the carefully calculated German drive to Paris had been turned into defeat at the Battle of the Marne, it was evident

that some effort would have to be made to coordinate and centralize the activities of so many diversified organizations, else a serious misdirection and an unfortunate waste and duplication of effort would result. The wharves at Le Havre, in France, were already stacked with packages of relief supplies, opened by the French customs officials and exposed to all weather conditions, undelivered because there was nobody to assume the authority of delivering them, while the crying need for them existed in the war-devastated interior of the country. At this time the American ambassador, Mr. Myron T. Herrick, asked the American Chamber of Commerce in Paris to have these supplies delivered in Paris. Here an old château, the former American Embassy, was utilized for storage, and in a short time was literally swamped with a vast, heterogeneous collection of packages.

It was with the idea of introducing some semblance to order into this chaos that, largely through the efforts of Ambassador Herrick, the American Relief Clearing House was organized in Paris under the official sanction of the French Government, with Mr. H. H. Harjes, of Morgan, Larjes & Co., as president. The object was to centralize and control at Paris the receipt of relief supplies and money from America; to investigate the needs of French localities and to keep relief organizations in the United States informed of those needs; to clear at port of entry all goods consigned from America, and to forward those goods to their destination, at a minimum of expense. The Clearing House would also receive money and purchase supplies with or without definite instructions as to distribution.

THE WAR RELIEF CLEARING HOUSE

In March, 1915, a complementary organization was formed in New York, the War Relief Clearing House for France and Her Allies. Since that time and up to early December, 1916, it had forwarded to France more than 57,000 cases of relief supplies, the value of which is indeterminate, but, on a conservative estimate, totals up to more than \$4,000,000, and it had received approximately \$1,000,000 in

cash. Its printed circular states that it is "in touch with more than 5,000 relief organizations, societies, schools, clubs, and groups of individuals located in various parts of the United States, Canada, Hawaiian Islands, and Cuba, in no sense supplanting these organizations, but lending them its exceptional facilities, free of charge, in order that the charitable work going on in this country may not suffer from duplication, inefficiency, or wasted effort." In the forwarding of supplies to the wharf of the Clearing House at the foot of Charlton Street, New York, many of the express companies accept shipments at two thirds of the regular carriage rates. The French Line provides free oceanic transportation of these shipments, and the French Government allows them to enter France free of import duty and transports them over the French railroads.

THE AMERICAN RED CROSS

A service somewhat similar to that of the Clearing House is rendered to other relief organizations by the American Red Cross. In degrees great and small the Red Cross has coöperated with forty or more relief organizations in the distribution of their supplies. Since August, 1914, it has sent abroad 400 or more surgeons, trained nurses, and skilled sanitarians and kept most of them actively engaged in relief work in France, Serbia, England, Germany, Russia, and Austria-Hungary. On December 1st it had collected a fund of approximately \$2,430,000 and had shipped \$1,537,911 worth of supplies to Europe, of its own and of other relief organizations, a total of 347 shipments, of 47,241 packages. Incorporated by an Act of Congress in 1905, it is necessarily a strictly neutral organization so far as its own work is concerned; but it religiously keeps its faith with the donors of money or supplies who designate the particular use or the destination of their gifts.

The fact that the American Red Cross was in existence for nine years prior to the outbreak of the war, and is the only national relief organization officially authorized by the United States Government, has given it a standing and a nationwide acquaintance that have been invaluable in

the present world crisis. Through its friends in all walks of life—business, social, political—it has a tremendous fund of accessible good-will that is possessed by few, if any, other relief organizations.

To consolidate into full effectiveness the collection of all American funds for the relief of sufferers in the Allied countries the National Allied Relief Committee was organized in July, 1915. Its scope of endeavor is to make known the needs of the sufferers in the Allied countries and to obtain money for their relief; to assist other organizations in obtaining such contributions; to prevent duplication and overlapping of appeals, and to distribute relief where it is most needed through reliable channels. Its own fund amounted in early December to \$475,000. The National Allied Relief Committee coöperates with more than thirty other relief organizations in this country. It was New England Section of the National Allied Relief Committee that managed the Allied Bazaar at Boston in December, 1916.

A GREAT JEWISH MEETING

For a picture of what constitutes the second greatest relief effort in America you must go back to a meeting in Carnegie Hall, New York, held for the purpose of relieving the distress of Jews in the various war zones, on an evening in the last week of December, 1915. The hall was crowded with sympathizers—of all grades of social and financial status. And such a recapitulation of horrors as they listened to from the speakers on the stage—of atrocities in Poland "so hideous in their cruelty that many of the details had to be spared"; of the devastation in Galicia; of the unspeakable suffering following the Russian decree ordering the expulsion of all Jews from the war zones!

Had not the *Kadish*, the prayer of mourning, been intoned? Had not the *Shofar*, the horn of distress, been sounded? And had not the response of American Jewry been, to date, sadly inadequate? Let the Jews of America hang their heads! How could they stand apathetically by, when across the waters, from their brethren in Poland, in Lithuania, in Galicia, in Palestine, came the dolorous wail:

See! . . . O, Israel!

At your altars we stand, the hungry and homeless, with our little children who have been wandering foot-sore over the roads; and our wives who have borne suffering beyond a common lot.

We pray for life.

Women in the audience sobbed aloud, great tears streaming down their cheeks. Venerable patriarchs tore their beards, lifted up their arms, and cried to Heaven, and the fire of indignation flashed in the eyes of the younger, able-bodied men.

And then the tocsin call: Who would help to relieve the sufferings of the beloved kinsfolk in that abomination of desolation.

A brief, ominous stillness. Then suddenly the storm broke. To its feet the assembly rose as in a body. From the top galleries could be heard the muffled thunder of a thousand feet tumbling down the carpeted staircases three steps at a time in the mad effort to be among the first to contribute. Men emptied their purses, and womenfolk, rich and poor, tore expensive diamond rings and necklaces and cheap trinkets and other tawdry adornments from their persons and flung them on the stage. A laborer in a soiled blue smock and greasy trousers dashed up, and, digging his hand in his pocket, emptied it of twenty-one cents, which he cast violently into the contribution heap. A few moments after regaining his seat he fought his way back to the stage, to add six cents that he had discovered in another pocket. Jacob H. Schiff, Nathan Straus, and Julius Rosenwald each contributed \$100,000.

\$3,000,000 RAISED IN ONE EVENING

When the storm subsided, \$750,000 had been gathered—in money, jewelry, and promises of money. Then the audience slowly left the hall, many of them walking to their homes on the East Side, a distance of four miles or more, to save the carfare.

Again, on December 21, 1916, the Jews met at Carnegie Hall, and many of the scenes of the year before were repeated. This time, however, the Jews outdid themselves; approximately \$3,000,000 in cash and pledges was raised toward a total fund of \$10,000,000 which Jews in America purpose to collect for war relief in 1917.

There is little of waste and duplication and much of coördination and centralization of effort in the collecting of Jewish funds. There is the keynote to the reason why the charity collected for Jewish war relief ranks second only to that gathered in the United States for Belgian relief, if it has not already exceeded it. Prior to the meeting last December, approximately \$6,500,000 had been received by the Joint Distribution Committee, which handles the funds of the three principal Jewish war relief organizations in this country: the American Jewish Relief Committee, which has for its field the wealthy and reformed Jews in America; the Central Relief Committee, which collects donations from the orthodox Jews; and the People's Relief Committee, which canvasses the working classes.

POLAND, IMMOLATED

Indeed, in considering the tragedy of Poland, it is better, perhaps—with our present limited mad-house accommodations—to think of it in abstract terms. Starvation here has reaped a bountiful harvest. It has been said that, in the Gorlice district alone, a million and a half non-combatants, hemmed in between the lines during eighteen months of fighting, died from hunger and disease; that unmentionable crimes concern 500,000 innocent girls. About 2,000,000 Polish men have been drafted to fight against each other in alien armies. Two years and a half of earthly hell are written in the mathematical difference between 34,000,000 and 20,000,000. The former figure is the estimated Polish-speaking population of Russian Poland, Galicia, the Baltic provinces, Posen, Ruthania, and Lithuania before the war; the latter represents what is reported to be left of them—in the hungering flesh.

America has done comparatively little to relieve the distress of these homeless and starving people. President Wilson on October 17th last had to report his failure to bring about an agreement between the Allied and Teutonic Governments on Polish relief. There is, however, no embargo on money. An agency—the German Import Company—supplies food in a limited degree to the

civilians in those parts of Poland occupied by the Germans, at approximately seven times the normal cost of the food. The Polish Victims' Relief Fund in New York to date has collected about \$525,000. Of this sum, Mr. Ignace Paderewski, the celebrated pianist, by his concerts and lectures, has contributed \$141,000. Poles in America have given \$160,000. In Chicago, the Central Relief Committee of American Polish relief organizations has collected approximately \$239,000. In May, 1916, the Rockefeller Foundation appropriated \$1,000,000 for relief in Poland, Serbia, Montenegro, and Albania, and drew up a plan for a neutral commission to be organized under Mr. Herbert C. Hoover and to carry on its operations along the lines of the methods used in Belgium and Northern France; but the German and British Governments have been irreconcilable. The million dollars appropriated has been held available for use as fast as supplies of food and clothing have been obtainable, and their importation permitted. Up to the present time about \$220,000 has been disbursed.

ARMENIAN ATROCITIES

In all the European chamber of horrors there is none, perhaps, which, in the infamy of its cold-blooded barbarity and Machiavellian devilry, approaches the era of Armenian massacres ushered in by the Turkish Government in April, 1915.

The Armenians have constituted about 8 per cent. of the total population of the Turkish Empire. Skilled, sober, industrious, money-wise, among the phlegmatic Turks they have secured what has virtually amounted to a monopoly of the trade, and much of the wealth, of the country. They have that genius for commerce, the same instinct for a bargain that characterizes the Jew of Eastern Europe and the Greek merchant of the Levant. And throughout the history of recent years has run an undercurrent of rumor—true or false as those rumors have been—that they have had practical designs for bringing about their national autonomy.

Thus they have long presented at the chancellery of the Sublime Porte a vexed "question," which the Sultan, Abdul-

Hamid, resolved into its ludicrously simple elements: "The way to get rid of the Armenian question," said he, "is to get rid of the Armenians."

What "getting rid of" the Armenians meant, the civilized world had an opportunity to learn from the reports of the wholesale massacres of 1895-1896. The widespread massacres and deportations extending over a period of six months from April, 1915, and over the territory included between the frontiers of Persia and the Sea of Marmora, are apparently but a continuation, on a grand scale, of the Hamidian policy of extermination. Estimates of the number killed in that time range from 800,000 to a million. "It would seem," said Lord Bryce in a speech delivered in the House of Lords in London on October 6, 1915, "that three fourths or four fifths of the whole nation has been wiped out, and there is no case in history, certainly not since the time of Tamerlane, in which any crime so hideous and upon so large a scale has been recorded."

The procedure was exceedingly systematic. The whole Armenian population of each town or village was cleared out, by a house-to-house search. Every inmate was driven into the street. Some of the men were thrown into prison, where they were put to death, sometimes with torture; the rest of the men, with the women and children, were marched out of the town. When they had gone some little distance they were separated, the men being taken to some place among the hills, where the soldiers, or the Kurdish tribes who were called in to help in the work of slaughter, despatched them by shooting or bayonetting. The women and children and old men were sent off under convoy of the lowest kind of soldiers—many of them just drawn from gaols—to their distant destination, which was sometimes one of the unhealthy districts in the centre of Asia Minor, but more frequently the large desert in the province of Deir el Zor, which lies east of Aleppo, in the direction of the Euphrates. They were driven along by soldiers, day after day, all on foot, beaten or left behind to perish if they could not keep up with the caravan; many fell by the way, and many died of hunger. No provisions were given them by the Turkish Government, and they had already been robbed of everything they possessed. . . . Some of the mothers went mad and threw away their children,

being unable to carry them farther. The caravan route was marked by a line of corpses.

Another sidelight on the procedure is the report of a European consul in Turkey that on one occasion 10,000 Armenians were taken out in boats, batteries of artillery trained on the boats as targets, and the entire company drowned.

Thus has a field been prepared for the work of the American Committee for Armenian and Syrian Relief, which has collected a fund of approximately \$2,500,000. This includes a total contribution of \$530,000 from the Rockefeller Foundation, \$50,000 from Syrians in Cairo, Egypt, \$20,000 from Nubar Pasha, the European representative of the Armenian Apostolic Church, and more than \$200,000 from Armenians and Syrians in the United States. American consuls, missionaries, and others in Turkey, the Russian Caucasus, Persia, and elsewhere co-operate with the Committee in the actual work of distribution of funds and supplies. And, incidentally, here is an unwritten epic of heroism and unselfishness: eight American missionaries in this field have died under the terrific strain of their self-imposed task.

THE PART WE HAVE PLAYED

It is impossible to estimate with any approach to accuracy the sum total of America's contribution to war relief. That were a monumental task for a corps of expert auditors even if it were possible for them to have at their disposal all the accounts of the multitudinous relief organizations throughout the country. The shipments of the War Relief Clearing House, for example, represent a considerable percentage of the efforts of nearly all the American committees for French relief as well as of the committees that co-operate with the National Allied Relief Committee. The Clearing House, in turn, has distributed much of its supplies and funds through the Red Cross; which, again, has forwarded many shipments to France through the Clearing House. Funds and supplies, in amounts large and small, of forty or more relief organizations of all sorts have been handled through the Red Cross. The total appropriation of the

Rockefeller War Relief Commission up to early December was about \$4,000,000. Much of this has been distributed through various other relief committees.

If, through all this maze of coöperation and inter-accounting, an actual figure could be ascertained, that still would not represent America's total effort, for the services and the personal contributions of many Americans, here and in Europe, appear nowhere in the records of any of the relief organizations. A consensus of approximations, however, sets the figure of America's total contribution at somewhere in the neighborhood of \$40,000,000. Allowing for discrepancies between this sum and the true figure, have we by that gift lived up to our traditional reputation, enjoyed for many decades past, and as many European writers were describing us even months after the outbreak of the war, as the most benevolent nation in the world? A few, unforgiving statistics will disabuse our minds of any empty sentimentality that we may be entertaining in this direction.

The balance of American foreign trade in our favor was \$438,000,000 for the year ending June 30, 1914. The balance in our favor during the two years ending June 30, 1916, was \$4,160,000,000. Clearly, then, here is a balance of \$3,722,000,000 that may be attributed to the European War. What is the percentage of profit on this tremendous sale of American goods? Certainly there was little of European competition to exert its inevitable economic tendency of keeping the margin of profit down. But even assuming that the owners of American capital invested in the enterprises that have been selling abroad were content with no more than the usual 6 per cent. rate of interest—an exalted assumption at its best. That would represent a profit of \$223,000,000. But, of course, no firm would stay in business that realized only 6 per cent. on the sales of its products. At what figure, then, shall we place the margin of profit? Thirty per cent.? Many exporters realize more than that. But figure it on an arbitrary basis of 20 per cent.—that would indicate that, as a result of the vastest war in history, America has received a profit on

its export trade alone of \$744,000,000, less than one nineteenth of which we have given to war relief. On the published statements of only six of the companies whose stocks are categorized as "war brides," the net income in nine months of 1916, as compared with the corresponding nine months of 1915, showed an increase of \$182,605,228—in nine months! And this list of six stocks, strange to say, does not include Bethlehem Steel, which skyrocketed in Wall Street from 30 in August, 1914, to 644 on December 9, 1916; or International Mercantile Marine, the selling price of which was multiplied by forty-seven during the same period.

If the "added fillip" be needed completely to demolish the monument we had raised by our generosity before the war, it is supplied by the following facts: American charity contributed through the Commission for Relief in Belgium has amounted to \$8,747,138; England's corresponding charity, aside from its governmental subventions, has been \$13,689,670. Approximately \$120,000,000 (chiefly of British and French money) has been spent in the United States by the Commission for Belgian and French relief. Still estimating on a basis of 20 per cent., we have made a profit, on that expenditure alone, of \$24,000,000, nearly three times as much as we have contributed for Belgian relief through the Commission, and more than half our total contribution to all manner of war relief.

There is no question but that by proper organization and direction of the collecting agencies American charity to the war sufferers would have been many times what it has been. There are abundant and indisputable proofs that altruism still thrives in a spacious section of the American heart. Examining the social tree, one finds wholesome evidences of it in the roots thereof and in the topmost branches. May we cherish the belief that in the kaleidoscopic succession, since August, 1914, of events of so vital affair with our national destiny and with that of the whole world, America has not been able to give the same attention that we would otherwise have given to the relief of suffering humanity? It is yet not too late for us to awaken.

IN A DUGOUT ON DOUAUMONT

THE DESOLATION OF THE BATTLEFIELD BEFORE VERDUN—THE ANNIHILATING CURTAIN
OF FIRE OF THE FRENCH HEAVY ARTILLERY—UNDERGROUND FORTS
THE ONLY SAFEGUARD AGAINST ARTILLERY FIRE

BY

ARNO DOSCH-FLEUROT

FROM February, 1916, until recently the Germans had suffered approximately 600,000 casualties before Verdun. The French had suffered probably 400,000. Most of this million of men were lost on the three miles of ridge that runs through Thiaumont, Douaumont, and Vaux. There has never before been a battle that lasted a year and cost a million men. And the most extraordinary moment of this year-long battle was the afternoon of October 24, 1916, when the French retook Douaumont, which the Germans had captured. They took it by a new development of warfare in which the charge is made at a walk and without bayonets.

On the side of Fort Douaumont, called by the Kaiser the keystone of Verdun, there is a hole in the shell-torn earth named the Abri Adalbert. It is a well-protected shelter built by the French in the early days of the war, but renamed by the Germans after one of the Kaiser's sons, Prince Adalbert, and when the French had recaptured Douaumont and all the other forts dominating Verdun from the east, it amused the *poilus* to keep the name and to sleep safely in the *abri* named in honor of the brother of the Crown Prince. The fact that they had recaptured it in a single attack on the 24th of October might have been enough to brighten the dark hole, but it was more particularly, I believe, the complete failure of the Crown Prince's pretenses and of the whole imperial purpose that gave the joke the Gallic touch.

I penetrated to the Abri Adalbert through the shell-craters at two o'clock one morning in early November less than two weeks after its recapture by the French. It was,

then, exactly as recaptured, as the Germans were making the region as costly as possible to hold, and most of the troops in the attack were still sitting tight in their regained shelters. It took five hours' exhausting climbing over regained ground to reach the *abri*, but it was not as costly a business to maintain the French troops there as the heavy artillery fire might have indicated.

Most of the soldiers were sleeping soundly in the numerous underground shelters, for the moment quite safe. They would continue safe, too, it was evident as long as the heavy French artillery before Verdun remained superior to the German. The fact that the French had just recaptured those difficult shell-blown hills in itself proved it. So they slept without danger, though the German lines to the north were only three hundred yards away.

In the early morning I dragged myself through the mud from one shell-crater to another to the top of the ridge where I could see the front line. I was curious to see what a front line under these conditions looked like. It was moderately dangerous from the point of view of shells but fairly safe from rapid-fire and gun-fire because the shell-holes were so close together on that whole ridge that it was possible to dive over the narrow, crumbling barriers from one crater to the next. It was real driving, too, as the shell craters were half full of water.

Finally I was able to see a French machine-gun crew sprawled out in the bottom of a crater, the muzzle of their gun covered with mud and pointed out over the rim. From their point of view, as well as mine, the outlook ahead was like that of a nasty choppy cross-sea of mud seen from a small

air-sunk boat. It was impossible to see far because of the ridges of the shell-craters rising up like waves, much as the view is limited on a nasty piece of sailing water, but I could see far enough to make out that the front line was not altogether continuous and most of the shells with which the Germans were whipping up his fantastic mud sea were doing no harm. As I had learned that night mounting the ridge, a shell might break fifteen feet away from you in the adjoining crater, and, if you were lying flat in the bottom, you would probably be simply covered with mud. You could then pull yourself out into the new shell-crater and wait for another. That, in fact, was what the front line of French troops were doing.

NO TRENCHES LEFT

There was, of course, no such thing as a continuous line of trenches. In fact, there were no trenches at all. There had been trenches there before the French made the successful return attack, very complete and modern trenches, and the barbed-wire entanglements before them were impenetrable. But there was nothing of all this to be found now, the trenches had been completely obliterated by day after day of heavy artillery fire, and on the whole hill I did not find a piece of barbed-wire long enough to stumble over. I do not even remember seeing any barbed-wire or any of the supports which hold it up. It was not until afterward it occurred to me this ridge had once been crisscrossed with barbed-wire entanglements. They had been blown deep under the steady pounding of shells and the earth over them had been boiled over and over again by the shells that followed. On that whole ridge, a stretch of several miles, there was not a spot as big as the palm of my hand where the earth had not been flung into the air, heaped and flung up again by the shells with which the French preceded their attack. The Germans were engaged now recharging it anew.

The best view of this newest type of battlefield was from the freshly trenched entrance to the Abri Adalbert. Looking directly out, I could see down the long ridge southwest to the Meuse. This ridge,

which is called Froide Terre (cold or barren ground) because it was formerly unproductive of anything but scrub-brush, runs from a point on the Meuse just north of Verdun in a line more or less parallel with other ridges dropping to the low plain bordering the foot-hills on the east, a plain made famous in this war—the Woëvre

NO SIGNS OF LIFE

The Froide Terre has two crests on which rest forts Thiaumont and Douaumont. From the Maison Blanche, an old ammunition depot well down toward the bottom, to Douaumont at its height, and Damloup, far down on the lower reach toward the Woëvre, there was nothing to see but destruction. There was not a piece of brush-stump standing, nor a single blade of grass. The summit of the ridge was cut away to a backbone, and the sides were terraced with pot-holes full of water constantly changing their shape and pouring from one to another as the latest German shells arrived.

Looking northeast up the ridge, Thiaumont and Douaumont could be distinguished only because they occupied the two highest points. Of their high outer stone walls and surrounding moats nothing could be seen. The land about them had been flung up over and over again until it formed a continuous slope to the tops of their walls, as level and obliterating as drifting snow. The blown mud, however, had no other points of resemblance to the drifting snow.

THE PERSONIFICATION OF DESOLATION

A final chill was given the barren ground by the torn bodies of soldiers with which it was sown. They were indiscriminately German and French, as burying or carrying away the dead was impossible. It was sufficiently difficult to rescue the wounded. The fallen bodies were being constantly thrown about and torn to pieces by arriving shells until the fragments were buried deep by direct impact. Since the French had captured it the German counter-fire had been so intense that only one of the thousands of German bodies that fell there still lay intact. The dead German was an ominous figure, as his

right arm pointed straight upward as if in grim warning to all who dared mount the Froide Terre.

I have described this new battlefield at considerable length because I wanted to emphasize the completeness of the destruction under the new heavy French artillery fire. I must also point out that I saw only one portion of the battlefield near at hand. We had to travel by moonlight and in the early morning. During the day it was almost certain death to venture out of the shelters, especially at Douaumont. But I could see regained Vaux and Fleury, or, rather, the spot where Fleury once stood. There were not two stones together to indicate where the village once nestled in the ravine looking eastward to the Woëvre. The foundations, streets—all had been obliterated.

IMPOSSIBLE TO DESTROY THE FORTS

But, with all the destruction, the *abris*, the redoubts, and the forts themselves remained more or less intact. The heaviest artillery—particularly the new French 400 millimetre guns—cut deep. The giant shells went in places through many feet of masonry, but they could not completely destroy. Thiaumont and Douaumont might be buried externally in mud, but inside they were still good points of defense. The Germans evacuated them only because their surrounding lines were destroyed. Vaux suffered more than the others because the Germans, evidently feeling they could never come back, blew it up as they left. At that, it still stands a fort, though damaged.

A NEW PERIOD IN WARFARE

Sitting in the Abri Adalbert, which has room for 75 men or more, between the setting of the moon and the dawn, I heard at first hand how the Froide Terre and Douaumont had been retaken by the French. It contains an important military lesson, one the Germans experienced too thoroughly not to understand. So there is no impropriety in relating it. It reveals an entirely new period in warfare—the period that has succeeded trench warfare. It is no less distinct a development of this war and requires greater engineering skill

as well as greater heroism. It shows clearly for what all armies must prepare. The French army has taken the lead, and its success points the way.

I got the story from too many mouths to put it directly into the words of any one. The military significance of it only came up after we had talked of many things in our efforts to keep from shivering, though soaking wet to the skin. There were two privates around an alcohol stove making chocolate, a sergeant by the telephone, a handsome young captain, two other correspondents, and myself. The soldiers were discussing what could be done with the land now they had regained it.

"It is too full of unexploded shells and hand-grenades to be worked," said one.

Their captain agreed it would be difficult, and the constantly exploding shells outside—forty or fifty to the minute—accented his words.

"I have read of an electric device for finding them," interrupted the sergeant. "They have been using it successfully on the battlefield of the Marne."

"But here," replied the soldier, "there must be an unexploded shell to every yard. It would take a lifetime getting them out."

"Why not put a fence around it and leave it," said one of the other correspondents with American disregard for land, and the idea was so astounding to the Frenchmen with their veneration of the soil that the discussion died.

Up to this time the French had been handicapped by the lack of heavy artillery, and, while not oversupplied as it was, General Mangin, who directed the artillery fire, felt rightly that he could blow the Germans completely off Froide Terre ridge.

THE TRIUMPH OF HEAVY ARTILLERY

He began with a preliminary artillery fire that spared no square inch on the whole ridge. He used only his heavy pieces and fired contact shells. It required more than a million shells, how much more I do not know, but the destruction was complete. The ridge was left as I have described it. It has since been shelled by the Germans with almost equal completeness, but there has been nothing more for them to do than to boil it over.

This work finished, the attack began. It had been figured down to the minute, and went off as scheduled. The earth in front of the French troops no longer showed a piece of barbed wire or a trench. Its defenders were crouched in the shell-craters and hidden in the *abris*. Over them swept a curtain of French fire from the smaller but quicker 75-millimetre and 105-millimetre guns. This curtain descended on the riflemen and mitrailleuse companies in the shell-craters and, in the very midst of it, was assisted by the fire of the first wave of the French infantry, armed solely with automatic rifles, rifle-bombs, and trench-bombs. Each rifleman was attended by two helpers who supplied his gun with endless rounds of ammunition.

"TRENCH CLEANERS"

This first line of French automatic-rifle men and bombers was not very thick, but was so far forward it was really under the edge of its own curtain of fire. To make it effective and clean out the German first line entirely it was necessary to run the risk of killing Frenchmen with their own artillery. It was a sacrifice for the benefit of the many to follow.

Immediately behind this doubly heroic first line came the "cleaners of the trenches." Their name sounds blood-thirsty, but their work is not necessarily so. Their business is, first, to prevent the first line being shot in the back by men coming out of the *abri*, and then to make prisoners. In this case they were armed chiefly with knives for close fighting and bombs to throw into the shelters, and, from the looks of the entrances of the shelters on the Froide Terre, they did not miss one. One way or another the French finished off the entire first German line and moved on to finish off each succeeding line as they proceeded up the hill.

THE DEADLY CURTAIN OF FIRE

Behind the "cleaners of the trenches" came the main body of infantry, men carrying ordinary rifles, supported by big machine guns. They moved in comparative safety, if, indeed, it can be considered even remotely safe to be under an enemy barrier-fire.

The attack up the hill was scheduled for a certain minute, and at that minute the curtain of fire fell just before the first French line. Each minute it moved forward twenty-four metres, nearly eighty feet. The commanders of the artillery, two or three miles back, and the commanders of the first, second, and third lines of infantry worked with their eyes on their watches. Minute by minute the line moved forward eighty feet at a time. There could be no hitch, no delay. Once the curtain of fire descended, it had to sweep up over the ridge and the lines behind had to pace it. It was possible for the Germans to bring up reinforcements and meet the first French line under their curtain of fire, and to prevent the French from bringing up their third line by a barrier-fire so intense as to give the troops no chance of coming through alive, but either they did not have the troops or were unwilling to have them annihilated under the French curtain-fire. The French met resistance, and reinforcements were brought up, but not in sufficient numbers to slacken that steady pace of eighty feet a minute.

That speed may not seem much, but it was made up and down over shell-craters, the automatic-rifle men who set the pace carrying the heavy weapons constantly at their shoulders. For an automatic rifle is, after all, only a small machine-gun. I climbed that same hill at the rate of a mile every two hours.

THE ORDINARY RIFLE NEGLIGIBLE

It will be noticed that the ordinary rifle played a very small, if not a negligible, part in this attack. In fact, I cannot remember seeing any one carrying a rifle on the Froide Terre even after the intensive attack had ended. The modern infantryman is becoming more and more a machine-gunner or a bomb-thrower.

The essentials of this latest form of attack were:

1. Plenty of heavy artillery supplied with millions of shells.
2. An equally good supply of lighter, rapid-firing artillery, of which the best type is the French 75-millimetre and the bigger model of similar type, the 105.
3. Light machine guns that can be

carried by one man, with helpers bearing ammunition.

4. Heavier machine-guns to back them up.

5. Hand-grenades, lance-bombs, etc.
All other considerations are variable.

THE GUIDING AIRPLANES

Carried out on a wide front, so rapid an advance against an entrenched enemy must be watched closely from the air. Airplanes must hang immediately over the advancing troops reporting the progress back to the artillery commander. They must also fly low enough to see in detail what is going on. This means they must run the risk of being brought down by the shells of their own artillery, and this also happened at Verdun. To protect these battle directors from enemy aircraft a second line of fighting airplanes flew over the first, engaging the enemy air-fighters as they attempted to bring down the staff-officers flying just above the battlefield.

The whole plan of the battle was so scientific, so carefully worked out and scheduled, there was no room for slack work. There was also no place for "cannon-fodder." The unskilled soldier has disappeared. He must be an expert at something, and in addition all must be expert bomb-throwers.

The Verdun attack was successful for the French because they had prepared to the last detail and put in their best brain work. I was reminded of something M. Loucheur, the chief shell manufacturer in France, said to me recently:

"The nation that makes war in the most complicated manner has the best chance of success."

In this respect the Germans had all the advantage over the French at the beginning of the war.

FRANCE BUILDING MUCH HEAVY ARTILLERY

But the French have been making big guns and getting more nearly on an equality with the Germans from the point of view of artillery. They did not start as soon as they might have, as the faith of the military authorities in the "75" was so great as to retard the building of heavy artillery

even after the war had lasted many months. It was not, in fact, until the Crown Prince began his costly attack on Verdun that the French realized the necessity of having as much heavy artillery as the German. So they began building large numbers of 220-millimetre guns, lesser quantities of even larger guns, and a few 400-millimetre cannon to match the German 42-centimetres. But they had begun building on a large scale too late to save Verdun except at a heavy sacrifice of human life. The sons of France paid dearly because their army was not adequately supplied with heavy artillery, just as the sons of America or any other country would pay under similar circumstances. Providence was bound to be on the side of the army with the heaviest artillery.

So the French *poilus* saved Verdun largely with their small "75's" and their helmeted heads. It was magnificent, but expensive. The Crown Prince, having plenty of heavy artillery and great stores of munitions, took Douaumont in four days. The Kaiser praised his "brave Brandenburgers" for doing it, and, while they were certainly brave and indefatigable in attack, they owed their success chiefly to the concentrated artillery fire thrown out before them. The French had never experienced any such fire as this, because the Germans had never before taken the full advantage of their artillery superiority. An army less brave and devoted than the French would not have stood and died there. Verdun without adequate heavy artillery was looked upon at the time by the French army as almost certain death for its defenders. Every one who saw the Verdun army last spring was struck by the hopeless, though determined, aspect of the soldiers. When I went there in early November I was as much struck by the superhuman coolness of these same men under shell-fire. They had gone to Verdun convinced they would die there. Now they had lived through a miracle and found the great sacrifice no longer necessary. They had reason for feeling they lived charmed lives.

The French retook Douaumont for a few days in May, a great feat of arms when it is considered that they were still



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I. TRANSPORTATION TO THE FRONT AT VERDUN

As the battle of Verdun grew in intensity communication with the front became more difficult. Donkeys succeeded motors, and men succeeded donkeys until—

inferior from the point of view of artillery. The additional artillery they had received consisted of old fortress guns from the Italian frontier made in the year 1878. In fact the Germans were kept from coming

into Verdun for months by these old fortress guns.

But the French were able to do nothing effective until they were in a position to bring up new, heavy artillery equal to that



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II. TRANSPORTATION TO THE FRONT AT VERDUN

—just after the recapture of Douaumont, food, water, and munitions were carried up by men at night without even the shelter of communication trenches

of the Germans opposing them. Then they took the German idea of concentrated attack and carried it to its logical conclusion. They had already had some practice in concentration on the Somme, but, as if in poetic justice, it was at Verdun that they made the most complete reply to the German method.

At Verdun we have a comparison of the development of the warfare in six months. When the Germans made their attacks last winter and spring they were preceded by a heavy, but not a completely devastating, artillery fire. They also brought up their men in the old mass formation. So they did not destroy entirely the front line that faced them and



Ch Mangin

GENERAL MANGIN

An expert in the use of artillery who carried out the attack on Douaumont and the advance beyond on December 15th—attacks which set a new standard for this war

their mass formations were good targets for the French artillerymen.

Note the change in six months:

The French artillery fire began destroying every destroyable protective

The curtain of fire was much more intense than that of the Germans.

Instead of a mass attack, there were three separated lines offering a poor target for the German barrier-fire.

So, while the Germans lost half a million or more in the taking of the outer defenses of Verdun

the French retook all the forts to the east with only three divisions, 60,000 men. Their casualties were, perhaps, 10,000. They entered Vaux without losing a man.

That is the difference between very



"LA VOIE SACRÉE"

The road to Verdun—the artery to the heart of France—which supplied the defenders before the railways were reconstructed. On a stretch of twelve miles there were 3,000 men keeping it in repair.



VERDUN AT THE CROSSING OF THE MEUSE BEFORE THE WAR

heavy German artillery fire and annihilating French artillery fire.

The only defense possible against this

new type of attack is the deep dugout, or its improvement, the underground fort.

There is no relying on trenches and



THE CITY OF VERDUN AFTER ITS TRIAL

For months hundreds of shells a day have fallen on it until nothing is left but ruins, except the citadel, the house of Pope Julius II, and the damaged cathedral



A BATTERY OF "120'S"

The lighter guns, particularly the famous "75's," and their larger counterparts, the "105's," furnished the *tir de barrages* (curtains of fire), behind which the French attack advanced

barbed-wire. They disappear before a sufficiently heavy fire. That is the most significant fact about the latest development in warfare. But, as the Germans found on the Froide Terre and the ad-

joining ridges, disconnected forts, such as Thiaumont, Douaumont, and Vaux cannot be held against a sufficiently determined attack. A continuous line must be presented the enemy, and, even though



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LOADING A 370-MILLIMETRE (14.5-INCH) HOWITZER

The heavy guns, from the "220's" to the "400's," were used in destroying the German trenches preliminary to the French advance



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A BIG FRENCH GUN ON THE RAILROAD AT VERDUN

When the new French guns, ranging in calibre from 220 to 400 millimetres, reached Verdun the French took the artillery superiority from the Germans and preceded their attacks with a more thorough bombardment than had ever been used before

he overrun this line in the heat of an attack, it must be there complete and full of defenders when the attack is over. The Germans found that when their trenches were blown to bits and their

few survivors were cornered in shelters, the French lines swept around the three sides of the forts, and they had to evacuate or surrender. In Douaumont they surrendered, but in Vaux they profited by the



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THE ADVANCE OF A MACHINE GUN SECTION

In the French attack that captured Douaumont the first two lines were practically without rifles, being armed with automatic guns, bombs, and knives. The riflemen and machine guns followed



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IN THE FRENCH LINE OF ATTACK

The character of the country over which the French attack on Fort Douaumont passed at eighty feet a minute, led by officers, watch in hand, pacing the distance to keep the attack at its proper rate



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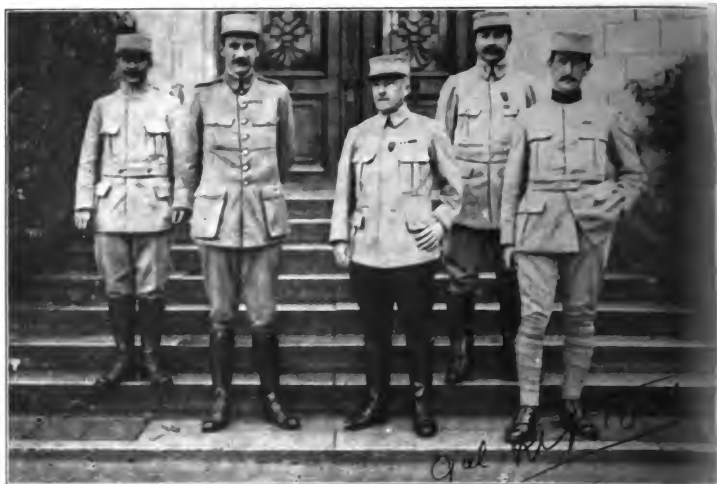
THE REMAINS OF TRENCH LINES

When the French bombardment of Douaumont ceased there were no German trenches left. The Germans were driven from the dugouts and shell craters, which became the French first line



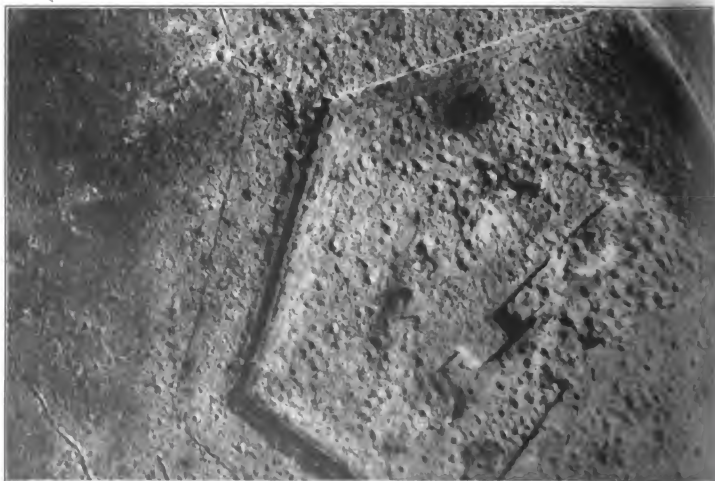
ON THE HILLS NORTH OF VERDUN

After a part of the ten months' battle. Now, after the recent bombardment, there are practically no trees standing and none of the original surface of the ground left undisturbed



GENERAL ROBERT GEORGE NIVELLE [CENTRAL FIGURE]

Who became the active chief of the French armies immediately after the success of the plans of offense worked out under his direction at Verdun



Photograph from *L'Illustration*

WHEN THE GERMAN TRENCHES WERE ON DOUAUMONT

The French at Verdun have used aircraft not only as observing and photographic machines, but at times officers have directed the progress of the battle from them



A DUGOUT USED AS A HOSPITAL

In a similar dugout, the Abri Adalbert, on Douaumont, the author spent a night soon after its recapture by the French and learned at first hand of the attack and saw its effects

lesson of the week before and left while there was still time. But the fact that these forts escaped with so little interior damage when the surrounding country was turned into a fantastic mud-hole shows that the only effective way to meet the attack of the newest warfare is by building continuous forts, with deep, communicating underground passages.

When the truly brave Brandenburgers took Douaumont in mass formation, their losses were so terrible that the Kaiser felt called upon to make up for it in praise. So he declared they had taken "the key-

stone of the strongest fort of our most important enemy." When the French retook Douaumont and the surrounding forts with only three divisions of infantry it did not even call forth an "order of the day" and at this time a complete official statement of the feat has not appeared. The French did not need to go into heroics, because their losses were not so heavy that they needed to hearten up the troops. The people of France also took it calmly because it had become generally known that France at last had the artillery to match its troops.

DR. ALEXIS CARREL

The famous French surgeon who has devised a method of antiseptic irrigation of deep wounds, that results in remarkably quick recoveries and, in most cases, without leaving any after-effects



HEALING WOUNDED SOLDIERS TO ORDER

BY A REMARKABLE NEW SYSTEM OF IRRIGATING DEEP WOUNDS, DEvised AT THE FRONT
BY DR. ALEXIS CARREL, OF THE ROCKEFELLER INSTITUTE—AND THE WAY
THE SURGEONS CAN FORETELL TO THE DAY WHEN
A WOUNDED MAN WILL RECOVER

BY

LEWIS R. FREEMAN

BEFORE going out to see the Carrel Hospital at Compiègne," said an official of that extremely useful branch of the French Foreign Office called "La Maison de la Presse," "it may be interesting for you to see a cinema film showing the working of the famous 'Method de Irrigation Intermittent Carrel' as developed and practised there."

He took me down a couple of flights to the little exhibition theatre on a lower floor of the building, selected from among a hundred others on a wall shelf the film desired, handed it to the operator, and turned off the lights. As the clicking of the machine began, the picture of an oper-

ating room appeared on the screen, or perhaps it was only a bed in a hospital ward. I had no eyes or mind for anything but a great raw, gaping wound—literally a foot or more of churned, angry flesh—which covered the whole side of one thigh of the inert body of a man, a soldier (as the caption informed us) who had been struck by a fragment of shell.

Presently two black-gloved hands appeared—those swiftly deft and gently cruel hands that one who has even once had experience of them always afterward associates with surgeons and surgical nurses—and began to thrust a wriggling sheaf of rubber tubes into the wound, kneading and manipulating the raw, riven

PIERRE LECOMTE DU NOUY

The French physicist who has discovered the "law of cicatrisation" by which the exact time a wound will take to heal under Dr. Carrel's method of irrigation can be accurately calculated in advance



flesh as a butcher skewers up a roast for the pot.

"No nerves, no sense of feeling at that depth," explained my companion in response to my involuntary start and exclamation. "Although that poor chap has had no anesthetic he probably feels almost no pain at all."

Suddenly another pair of black-gloved hands—hands which, despite the fact that the face of their owner was not visible, fairly radiated personality and force—flashed into view, whereupon the first pair instantly relinquished the leading rôle and "stood-by" as auxiliary.

"Dr. Carrel's hands!" exclaimed my companion, leaning forward with quickening attention. "There is not another such a pair of hands in all of France; perhaps in all the world."

Fairly twinkling in their swiftness, the deft fingers distributed the little tubes evenly through the soft mass of the torn flesh. Then a stop-cock was turned which, releasing a flow of some healing liquid to permeate every corner of the great wound, washed it as one would wash a sponge by holding it under a tap of running water.

That was about all there was to the main operation of the "Method de Irri-

gation Intermittent Carrel," perhaps the one most valuable discovery (from the standpoint of humanity) that has eventuated during, and incidentally as a direct consequence of, the war. Several subsequent views merely showed the astonishing progress in the healing of a wound which under the most approved practice of a year ago, if it had not resulted fatally, would at least have left the unfortunate soldier who received it a lifelong cripple.

Up to the time of the outbreak of the war Dr. Carrel, although already known to the medical profession of the world as one of its very greatest investigators in the field of scientific surgery, was best known to the general public as the man who had grafted the leg of a black dog upon the body of a white dog so successfully that the latter was able to scratch his fleas with the claws of the transplanted member. The American Sunday papers had hailed him, because of some astonishing experiments he had conducted in the rejuvenation of old dogs and cats (he had actually turned an aged, mangy, and blear-eyed cur of the street, if not quite into a Pekingese puppy, at least into a strong, healthy canine that gulped its food, frisked when whistled to, and apparently had rea-



THE CARREL HOSPITAL

Built as a tourist hotel at Compiègne. Dr. Carrel is achieving great results with his new irrigation method and is turning out wounded men perfectly cured, many of whom, without the use of this system, would be crippled for life

sonable expectation of many years of life), as the man who was going to locate the fabled "Fountain of Perpetual Youth," so vainly sought by Ponce de Leon, somewhere in the vicinity of the Rockefeller Institute. Most of his fellow-scientists have, of course, understood all along the goals for which Carrel was striving; the public, which may perhaps be pardoned for failing to see just how that active black leg on the white dog was going to render their taxes, or even their aches and pains, any lighter, has had to await the distinguished investigator's actual attainment of one of his goals before it could fairly grasp what he was "driving at."

The "goal" at which Dr. Carrel may now be definitely announced as having arrived at is the discovery of a cheap and thoroughly practicable method for the speedy sterilization of deep wounds, an end toward which Lister started blazing the trail, but along which trail, however, comparatively little progress had been made down to a couple of years ago.

At the outbreak of the war Dr. Carrel, like so many other devoted Frenchmen living abroad (he had been for some time at the Rockefeller Institute), hastened home to place his services at the disposal of his sorely beset country. In the cool, methodical, ordered France of to-day one gets little hint of the chaos that prevailed in that country—as in most other of the belligerent countries of Europe—at the outbreak and during the greater part of the first year of the war. There was too little of just about everything except trouble, and this difficulty extended to the hospitals as well as to things strictly military in nature. It could not very well have been otherwise with the wounded streaming in in undreamed of numbers and with every ounce of the country's surplus energy upon the firing line.

Dr. Carrel might have taken his place in the hospitals beside his overworked brother surgeons and cut and stitched for sixteen or eighteen hours a day; but so far as being of any important help was con-



ALMOST READY TO LEAVE THE HOSPITAL

By a system of charts invented by Monsieur du Nouy, it is possible to figure the exact date on which a patient can leave the hospital, so that arrangements can be made ahead to have his place filled by another waiting wounded soldier

cerned, his efforts expended in this way would have been of about as much use as tossing a cup of water into the sea in an endeavor to raise the tide. If possible, his must be a work suited to his own especial talents, a work that perhaps no other was so well equipped to undertake; and such a work he set himself to find.

"What is your one greatest need?" Dr. Carrel began asking every surgeon of a military hospital with whom he could get in touch. Some of them spoke of more beds, more instruments, more money, more help; but all of them insisted that better sterilization of wounds, better methods of getting rid of infection, was the crying need. "Give us this," they said, "and we will not only save more wounded, but we will discharge those we save more quickly than is possible now, and they will also be better men when they are discharged."

"Better sterilization; perfect sterilization, if humanly possible." This seemed plainly to designate itself as Carrel's special line of endeavor. It was the kind of a

task that one might comfortably settle down to as a life-work; or even to leave, half done, as a heritage for some one else to base his life-work upon. That, indeed, was what Lister had done; as also those after Lister who had sought to perfect sterilization. Carrel entered upon the task driven by the spur of the knowledge that, to turn success to its greatest use, he must solve the problem before the war was over, perhaps inside of a year.

Thanks to the generosity of the Rockefeller Institute, which gave him practically carte blanche on the score of expense so long as research work calculated to be of ultimate benefit to the human race was being carried out, Dr. Carrel was able to undertake his work undeterred by what might have proved the almost prohibitive handicap of having to depend upon the already over-burdened French Exchequer for funds. It is quite possible that this circumstance alone made it possible for success to be attained in so short a time, for it enabled Dr. Carrel to summon to his



MME. CARREL FLUSHING A WOUND

"We take pride in the fact," said Mme. Carrel, "that no man has yet died from his wounds in our hospital. Indeed, the only one we have lost at all died from pneumonia"

aid, in the almost countless series of experiments involved, the best special talent that the world, outside of the Central Powers, of course, afforded. The hospital provided was a modern building originally erected as a tourist hotel, and its location at Compiègne—immediately behind that particular sector of the front nearest to Paris—was ideal for the purpose for which it was to serve. I will tell the rest of the story as I heard it from one of

Dr. Carrel's assistants at the hospital at Compiègne.

My visit to Compiègne did not begin auspiciously. The train, which I had been called at daybreak to catch at the Gare du Nord, dawdled along the way and took four hours to negotiate a distance I had covered, a fortnight previously, in a military motor in a little more than an hour. When I arrived at the hospital it was to learn that Dr. Carrel had been called



MAKING A DRAWING OF A WOUND

Preparatory to calculating its area and the time it will take for recovery from it. "We are turning out almost no cripples," said Mme. Carrel, "but men who can fight and work for France"

to Paris to attend an unexpected conference. I did not doubt that there were those still there who could tell me far more than I would be able to assimilate regarding the "Method Carrel"; but it was disappointing to miss hearing the story from that distinguished scientist himself. The day, too, I told myself, was not one calculated to put one in the proper frame of mind for "hospital study." It was a sparkling November morning,

with the sunlight turning the yellow autumn leaves to shimmering gold. The hum of a half dozen airplanes was in the air, and, silhouetted sharp against the northern sky, a couple of "sausages" were spotting for the lazily booming "heavies." It was distinctly a day for the trenches, not the hospitals, I told myself, and I was figuring how to shift my schedule when Monsieur Pierre Lecomte du Nouy entered and shook hands.

"I am only a physicist and mathematician," said Monsieur du Nouy, seating himself by the window and touching it lightly with a finger to check the vibration that was set going by the detonations of the distant guns; "but I have seen much of the work that has gone on here, and Dr. Carrel has asked me to tell you anything you may be interested in hearing about. You saw something of the hospital and of

would send an antiseptic solution to every part of the wound, allow it to pick up, so to speak, the germs of infection, and then carry them away. It was such a system that Dr. Carrel set himself to perfect.

"The prime desiderata of a system of this character were, first, a proper solution, and, second, a proper apparatus for applying or distributing it. The solution must not only be an effective antiseptic,



PERFORATING THE RUBBER IRRIGATION TUBES

These tubes are kneaded deep down into the flesh and an antiseptic solution is poured into the wound every so often, thoroughly washing it out and removing sources of possible infection

what Dr. Carrel is doing here on your last visit. What you want now, I take it, is to learn how the treatment was perfected and of its probable usefulness to France and the world at large. Very well, then, I will begin at the beginning, not of Dr. Carrel's work in general, but of his work here.

"It has been generally admitted that the difficulty in effecting a complete sterilization of deep wounds in the past has been almost entirely on account of the trouble in reaching anything but the surface with the antiseptic. Yet cleansing a wound through a surface application was like trying to wash a dirty sponge by laying a wet rag on it. Dr. Carrel at the outset conceived the idea that, just as one washes a sponge by repeated saturations and wringings, so should a wound be washed by some sort of a 'flushing' system that

but it must also be cheap enough to use with the greatest freedom, and absolutely non-irritating to the tender tissues with which it would come in contact. The apparatus must be simple, inexpensive and, above all, highly efficient. The problem of the solution was put up to the great English chemist, Henry D. Dakin, now of New York, while that of the apparatus claimed the attention of Dr. Carrel himself. The former was perhaps the more difficult of the two.

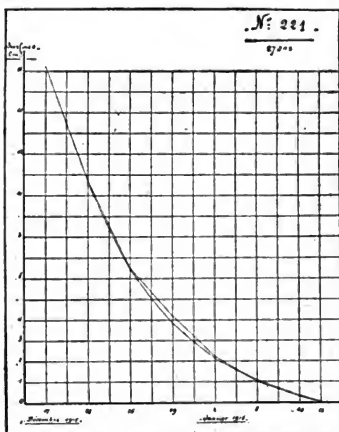
"First and last, Mr. Dakin experimented with more than two hundred mixtures before the one now in use—a one half of one per cent. solution of hypochlorite of soda to which is added a small amount of boric acid to take up the free alkali and render it non-irritating—was decided upon. This is really only a very

pure oxygenated solution of common salt, one of the cheapest and best of disinfectants. A great point in its favor is its almost negligible cost of three centimes (a little more than half a cent) per litre.

"In experimenting with the apparatus, the first tests were made by allowing the liquid to fall upon the surface of the wound from above, and then drawing it into the wound and carrying it away through the action of a suction pump working on a number of perforated rubber tubes buried in the flesh. Ultimately this plan gave way to practically its reverse—that of carrying the solution to the wound in perforated tubes buried in the flesh and allowing it to drain away by gravity. By the system as finally perfected, and as at present in use, the solution is carried in a receptacle at the head, or the foot, of the bed, and once every two hours, by opening a pinch-cock on the main rubber tube leading down to the wound, the latter is thoroughly flushed with the liquid under a four- or five-foot pressure. From this periodic flushing the system took its name—'Method de Irrigation Intermittent Carrel.'

QUICK RESULTS

"No sooner was the system put into regular operation than striking evidences of its efficacy were apparent. The daily microscopic examinations showed that the bacteria of infection in wounds under treatment were decreasing at a rate never known before, with the inevitable consequence, of course, that the actual healing of the wounds themselves was accomplished in far less time, often from a half to a third, than they had required under the ordinary treatments. Then another remarkable feature of this system developed. When the microscopic study showed the disappearance of all traces of infection it was found practicable to close the wound, either by stitching or with adhesive plaster, at once. It was as good as healed, and with the incalculable advantage over the old way of cicatrization that the area of stiff, useless scar-tissue was reduced almost to nothing. Ninety per cent. and more of the area covered by the original wound was replaced by firm, pliable, serviceable flesh—real muscle.



A CHART OF THE HEALING OF A WOUND
One line represents the calculated course of the healing of a wound and the other its actual course

"In fact, Dr. Carrel had discovered something very near to a perfect treatment for deep wounds of the flesh. How nearly perfect it was he did not himself suspect until he chanced to notice one day that the rate of healing of a number of wounds as plotted on the chart showed a remarkable regularity.

"THE LAW OF CICATRIZATION"

"It was at this juncture," continued Monsieur du Nouy, "that Dr. Carrel sent for me, who, as I told you in the first place, am but a physicist pure and simple, knowing nothing whatever of surgery and medicine. 'Here you have all the available data,' he said to me, opening a file of cards on which were recorded the salient facts regarding each patient treated, or under treatment, by the system in question. 'Now—if there is such a thing—find me the 'Law of Cicatrization.'

"I ultimately evolved a formula in which the only variable quantity was one which I symbolized as 'i,' to indicate the 'Index of Cicatrization.' At first I obtained this 'Index of Cicatrization' by working it out from the age of the man and the difference between the area of the wound on the first

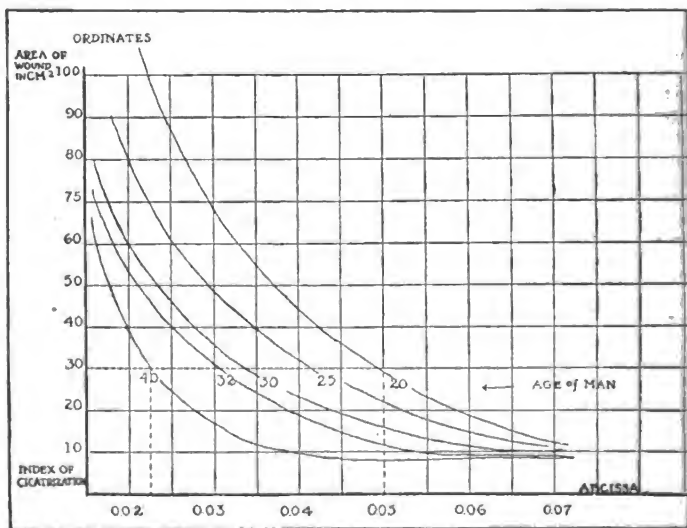
day of treatment and on the fourth; but later I made a chart on which, by plotting out 'lines of healing' for men of 40, 32, 30, 25, and 20 years respectively, it was possible to obtain the 'Index' by simply drawing a dotted horizontal line from the point indicating the size of the wound in square centimetres to cut the curve of the age of the patient, and dropping a perpendicular from there to the base line. The wound, I should have explained, is measured by laying upon it a sheet of transparent sterilized cellulaphane, outlining the edges with a glass writing pencil, and finally transferring it to a sheet of ordinary paper, where its area is calculated by means of a planimeter.

PLOTTING A "CURVE OF HEALING"

"When the 'Index of Cicatrization' is obtained, all that remains to be done is to put it into my formula and work out the latter. The result is the number of days it should take the wound to heal under

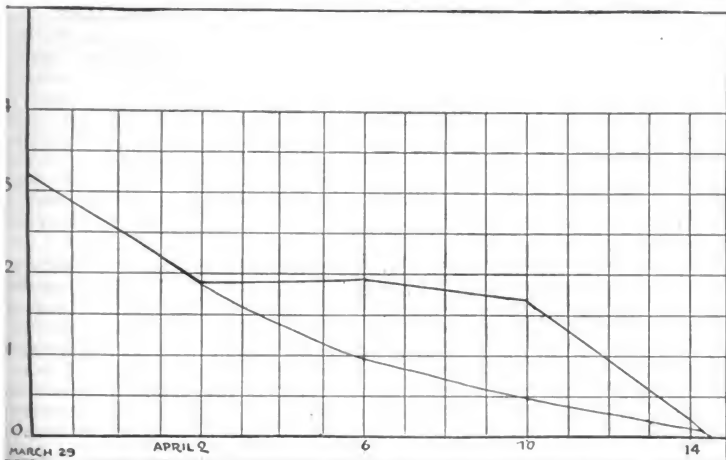
treatment by the 'Method Carrel.' From the time when it became apparent that I had been successful in discovering something very closely approximating a definite 'Law of Cicatrization,' we began plotting a 'Curve of Healing' on the chart as soon as a wound was put under treatment and, for many months now, the actual 'Curve of Healing' of all normal wounds has worked out practically identical with our theoretical curve in ninety-nine cases out of a hundred.

"'Wounded No. 221' here"—he took a card from the filing cabinet at random—"is a good average instance. The man was twenty-seven years old, the wound had an area of a little more than sixteen square centimetres, and I calculated that it would take twenty-six days to heal. Treatment began on the seventeenth of December, and not only was the wound closed on the twelfth of January, the exact date set for it, but on every day in the interim the variation of the size of the



AN "INDEX OF CICATRIZATION"

A geometrical chart on which is plotted the probable course of the healing of a wound so that the day when it will be healed can be foretold



AN UNUSUAL CASE

In which for some unknown reason the healing of the wound (represented by the upper line) failed to take the calculated course but later progressed so quickly that the patient recovered in the specified time

ound from that plotted in advance was ractically negligible.

"Now for a case where there was some ariation in the two lines. They are ather rare, but, in some respects, even ore remarkable than the others." (He urned a dozen cards in the cabinet before nding one showing what he desired.) This man, 'Wounded 366,' was also wenty-seven years old, and the small hell wound in his calf I calculated should e closed in a little more than sixteen days. or four days healing progressed exactly is forecasted. Then, in some way, the ound became infected and for eight days ade almost no gain at all. On the re-oval of the infection, however, not only did the wound resume its normal rate of ealing, but it actually made up for lost ime and closed up on the day originally set for it to do so. This happens re-peatedly, as the cards show.

"The great practical advantage," con-cluded Monsieur du Nouy, "of being able to calculate the 'Curve of Healing' in ad- vance is the line this gives us on the rate

at which a wound ought to close. Any sharp deviation from the curve we have plotted indicates at once that something is wrong, much after the fashion of the auto- matic fire-alarm which rings as soon as the air about it reaches a certain temperature. Incidentally, too, it enables us to figure weeks in advance the rate at which pa- tients can be discharged and at which beds will be vacant to receive new ones."

Madame Carrel—a trained nurse and an active assistant of her husband—ac- companied us on our round of the hospi- tal. "We take pride in the fact," she said, "that no man has yet died from his wounds in our hospital. Indeed, the only one we have lost at all died from pneu- monia. And see how comfortable they are! How confident of recovery! And the fine part of it, too," she added, "is that we are turning out almost no cripples, but men who can fight and work, fight and work for France. Our sincerest hope, now that the system has been so nearly perfected, is that it will be used in all the hospitals of France and her gallant allies."

A DIARY FROM GERMANY

BY

ERNESTA DRINKER BULLITT

THIS is the first of two articles taken from the diary which Mrs. Bullitt kept from day to day during her trip to Germany, Belgium, and Austria last summer. Mrs. Bullitt was exceptionally fortunate in being one of the very few people who have succeeded in bringing such a diary past the censor. The observations of men and events written down on the spot are not only more accurate than those written from memory in another environment, but they give a much more human, interesting, and authoritative view of the German condition, attitude, and people.—THE EDITORS.

COPENHAGEN, May 14, 1916.
—Once upon a time, a thousand years ago, before the war, one went abroad with no more preparation than a steamer ticket and an American Express check or two. Two days ago, we undertook to go from Holland to Denmark, via Germany. Before daring to approach Bentheim, the German frontier, we were equipped with passports, thrice vized; a special letter of identification from the Department of State, birth certificates, letters to the frontier authorities from Count Bernstorff and the German Minister at the Hague, eighty-seven other letters of introduction, two letters of credit, and, in addition, a Philadelphia police card.

We entered Germany at six in the afternoon laden with the milk of human kindness—we emerged at four o'clock the next afternoon with most of the milk curdled. We were broad-minded before we touched Germany. We—particularly Billy—were ready to understand Germany. Billy said he could see their point of view.

A young man got into the compartment. When we passed the first German milepost, the young man opened conversation by explaining how much he hated America, because she was selling munitions to the Allies. He never smiled. Neither did any one else on the train. Nor did any one in the deserted Hamburg station. Nor any one in the empty Atlantic Hotel. Billy, being of a chameleon-like nature, had become solemn. He did little things as if they were important, and he began to

order me around and look as if he expected me to carry my own suit-case.

In the Atlantic Hotel we asked to have supper served in our room, and were told no food could be had. True, it was midnight, but this was Hamburg's greatest hotel. Once upon a time that was the hour for light and gaiety. I tried to look pathetic and rich. The waiter "fell," and brought us two blood oranges. We feared to go to sleep lest we talk indiscreetly. That a dictograph was hidden in the heater near by was a certainty in Billy's mind.

Early the next morning we were awakened and descended to an empty breakfast room.

The taxi which took us to the station was another *memento mori*. It had evidently been rejected for military service because of lung trouble. As we crept through the door of the station, we met two girls who were smiling—smiling! On the train we met only solemnity, and the whispered comment, "Americans." Billy was losing some of his broad-mindedness.

At Warnemünde, we became "Number 36." At the upper end of a board shed we were left to shiver while the other passengers on the train, beginning with Number 1, disappeared through a sliding door. There were guards all about to keep one from walking anywhere one looked as if one wanted to go. Each time the door slid back we saw trunks, boxes, and passengers in various stages of disruption.

"Thirty-six!" called the Sergeant at the door. We entered without fear, for our baggage was innocent as a nun, and the

seals of the other frontier were unbroken upon its hinges.

A young man in field gray began the examination. He had been, before the war, a goatherd, I believe, or maybe a chimney sweep; but he had the mark of thoroughness upon him. I should like to make a law that no American customs inspector be allowed to go to Germany in war time. It would teach him things about examining luggage he never ought to know. This soldier fell upon our trunks—he made no distinction between the soiled clothes-bag and my white satin dress. As he went, he gathered speed. He whipped my blouses inside out, explored the feet of stockings, captured a piece of soap, delved between the bristles of a tooth-brush, thumped the sides of my trunk, bent up my shoes and threw them upon my evening dresses, then fetched up on my underclothes. A pink silk garment was held up and shaken. The officer in charge cried out, "Combination!" smiled affectionately at me, and came to superintend our unpacking. Billy presented our letters to the civil and military authorities from the German Ambassador and the Minister in Holland. The officer pocketed them.

Then began a period of confiscation. Books, writing paper, visiting cards, pencils fell under the embargo. Billy bore these losses with fortitude, but when his eleven tubes of hair tonic were placed among the other things his manhood was undone, and they led him away bleating helplessly, to be stripped. I was put in charge of a female in a red flannel blouse, who looked at the soles of my feet, felt in my hair, pried open the back of my watch, evacuated the inside of my hat, plumbed the depths of my fountain pen, examined my clothes, and then succumbed to the mysteries of my letter of credit.

I reached the outside world first. Billy was still in the hands of his explorer. I wondered if they were washing his back with acid for traces of secret writing. The boat whistle blew and still Billy did not come. Every one was on board when he came running down the wharf, his necktie flying, his shoelaces undone.

An aged ticket-taker stood on the ferry-boat at the end of the gangplank.

"Are you a German, or a Dane?" I demanded.

"A Dane," replied the aged man.

"Thank God!" cried I.

May 23d—Denmark is hospitable, inexpensive, and friendly. We have seen the Egans frequently. They have been more than kind. Mr. Egan has been in Denmark eleven years—a longer period than any other diplomat in our service today has held a post. By common consent, he is the most popular diplomat in Denmark. The other Ministers keep dashing in and out, getting advice from Mr. Egan. He is one of the few diplomats we have who really fits his post.

Among the other qualities Mr. and Mrs. Egan possess, is that of never making a "break."

Hence, they gave us (principally me) what we needed—advice as to caution in speech, behavior, facial expression, and etiquette, also warning us against writing anything down on paper. It's going to be hard on me. I never was born to be indefinite. I am practising conversing diplomatically: "Mrs. Bullitt, Verdun has been taken and Paris is about to surrender!"

"Really; how curious. Battles are so interesting, aren't they?"

"Mrs. Bullitt, if it were not for American ammunition, the war would have ended in six months!"

"Yes, battles *are* dangerous, aren't they?" Whereas, I *might* mention our Spanish War and certain famous German munition factories. So, the crest of idiotic amiability being reached, we move on to the weather.

We oughtn't to stay here any longer but we can't get up the courage to attack the frontier again, and every one tells us we won't get anything to eat in Germany—a fact substantiated by our own twenty-hours' experience. Besides this, we're enjoying ourselves, which is a perfectly good reason for staying anywhere.

Hotel Esplanade, Berlin, May 29th—
Act of Caution No. 1: I left what diary I had written in Denmark, where I'm sure of its neutrality not being violated.

Evidently when we crossed the frontier before, they left undone a good many things which they might have done, but they weren't guilty of slouching on the job this time, and I'll bear testimony to it at the Golden Gate. They kept our passports as souvenirs. It was as much as I could do to keep Billy from going to our Embassy at half-past eleven at night, when we got to Berlin. I must say I should have liked to wrap myself up in the American flag and sleep on Mr. Gerard's doorstep myself. The inspection this time was really too disgusting to repeat. I decided that, if I ever heard any one say again, "It's our orders," I should kill him.

AT THE AMERICAN EMBASSY

We lunched at the Embassy the day after we got here. Mrs. Gerard is charming and Mr. Gerard one of the most amusing men I ever met. Brusque, frank, quick-witted, a typically judicial mind, and a typically undiplomatic manner, he is the last person in the world whom a German would understand. His dry, slangy American humor, his sudden lapses into the comic in moments of solemnity, his irreverence for the great, shock the worthy German. That he treats the German in any other way than as a business acquaintance is most unlikely.

The Embassy is filled with Harvard secretaries, whose lips, as Mr. Egan says, are still wet with the milk of Groton. The ballroom is bulging with stenographers. Never did the world see its few remaining diplomats so overworked. Instead of coming down and reading the papers for two hours a day, they now all work mornings, afternoons, and sometimes evenings.

June 2d—We have been here a week.

I had eggs and a glass of milk to-day, neither of which, they say, can be bought. Really, to the uninitiated, it looks as if Berlin could go on indefinitely with England's fleet strung around her neck—but the eye of the paying guest is deceived. The bread, butter, and meat lines are long. Women stand hours to get their weekly allowance of a walnut size of butter for each one in their family; children are happy but thrive not on jam and artificial

honey. Many women wash their clothes but once in two weeks because, they say, it saves soap to do more at one time. You feel you're asking a great favor if you borrow the soap in a friend's house with which to wash your hands.

I dropped in for supper, unexpectedly, the other night at a friend's flat; they said they had all they could get to eat that day without paying half their yearly income for it. The fare was some large white balls which tasted like boiled dough, some little stewed prunes, and fried potatoes as a luxury. They scared me when they said the dough balls were a favorite German dish. You feel like saying: "I'll come to dinner, if you'll tell me what I'll have to eat first. If my food's worse than yours you win!" Housekeepers are only allowed half a pound of meat a person a week, and cream may be got by a doctor's prescription only. Coffee is half something else, and tea is dried strawberry leaves. "Did you ever imagine," they ask one, "that they would make so good a drink?"

The papers have come, announcing a great German sea victory. They say the English have lost a tonnage of 132,400 and the Germans 28,000 tons. Berlin takes it calmly, few flags are out, and there is no public rejoicing. Perhaps a few more people smile. This city is the gloomiest place I ever hope to have the misfortune of seeing. Billy says the atmosphere is like a mercury bath.

HINDENBURG, IDOL OF BERLIN

June 3d—To-day, the flags are all out for the naval victory, even the trams and 'buses are decorated. The Germans didn't wish to celebrate until they were quite sure. They've made one or two mistakes so they were cautious this time. The school children take a real interest in German victories. They get a holiday on the strength of one, and they measure the victory only by the length of their holiday. The joy is slightly adulterated by having to go to school first and listen to a careful explanation of what they are about to celebrate. Their fondness for Hindenburg is quite immoderate. In the eyes of German children, a campaign against the Russians is most praiseworthy.

The great wooden statue of Hindenburg, incased in geranium plants and scaffolding, had many nails driven into it to-day. The statue is an unsightly thing but it seems to appeal to the Berliners to buy a nail for the benefit of the Red Cross, climb the scaffolding, and hammer it in.

We went to the theatre last night. Theatres have been running full blast since the war.

June 4th—The English papers to-day arrived in Germany and announce that the German victory was scarcely a victory at all, and the *Post* called it an English victory. Both sides declare loudly that they were greatly outnumbered, each one insisting the whole enemy fleet was engaged.

SOME GERMAN "AIMS"

June 6th—The R—s for tea. Old Baron R. talked politics to us.

"The Kaiser didn't want the war," he said. "He doesn't belong to the Junker party and he doesn't want annexation, nor does he believe in the Tirpitz policy. He belongs to the Liberals and is strongly supported by the Socialists owing to his democratic tendencies. The Ministry and the Chancellor cannot be overthrown unless the Kaiser wishes it. If he should die, and the Conservative Crown Prince were to come into power and appoint a Junker chancellor and ministry, it would mean the ruin of Germany and the pursuit of a reckless policy of annexation, which would only bring the country into another war. The Kaiser, and the greater part of intelligent Germany, do not wish to keep Belgium and Northern France. They want only two or three miles in the Vosges hills so that, if war comes again, our armies will not have to fight their way up-hill. They will not give back Alsace-Lorraine. For Poland and Finland, they wish autonomy under a German or an Austrian Prince, while the Courland they would annex to Germany. Of course, we want our colonies back. What we want in Mesopotamia is hard to say as yet, but if the Allies take a share Germany wishes her portion."

"Why doesn't the Government make known its plan of evacuating Belgium, then?" we asked.

"I have urged it," he answered, "but the military party won't allow it. They say we must hold it as hostage for our colonies, and also they say the Allies would use all the troops they are putting against us there, in Belgium, for something else more dangerous to us if they knew we were going to get out anyway."

THE FINANCES OF GERMANY

June 8th—I met Prince B—— to-day and asked him when he thought the war would end, and he said, "When Russia was spent." I said that sounded rather pessimistic.

"No," he said. "I think we can wear her out and then get a port on the Baltic."

Personally, I can't quite see any one exhausting Russia yet awhile.

I asked him why they didn't stop pounding Verdun and go after Riga, but he didn't know the answer. All Germany professes the greatest admiration for France and says what a tragedy it is that she is now dead and gone, and useless. They had better take Verdun before they count France out, I think.

Billy is reading finance reports. The Reichsbank has not nearly run over the gold reserve yet. But it issues notes on baby carriages, false teeth, and hair. The bank must be doing the ash-man out of business.

The Chancellor has left off fighting the Conservatives about annexation, and Bactocki talks about food. He urges the people not to expect too much. I don't imagine they do, as I saw meat lines on every block in the north of Berlin this morning, and a policeman for each meat shop. The women looked patient enough.

The Germans admit the loss of two more ships, dreadnaughts. This brings their loss up to 60,000 tons.

June 11th—We got six London *Times* from K—. The difference with which the announcements of the sea fight are made in English and German papers is curious. The English have headlines: "Six British cruisers sunk"—"Heavy losses."—"Eight destroyers sunk." The Germans have no headlines, particularly they do not thrust their sunken ships upon the eye as do the English. The loss of the

Lützow, the largest ship in their fleet, was not announced until four days after the rest, and this in small type at the end of a long column of the British losses.

The Russian offensive seems to be of some worth. They claim 480 captured officers and 25,000 men. At least they must have some fraction of that number.

A DINNER IN BERLIN

Dinner at the Esplanade to-night was really too awful. We had neither meat nor bread cards, so were reduced to a dish called "lost eggs," and asparagus. The eggs were lost in some dreadful vegetable and the asparagus was that fat, white, and tasteless stuff they grow here. Billy remarked that the sauce hollandaise must have been difficult to make without either butter, eggs, or olive oil, and his tea, he said, reminded him of when his nurse used to stick her finger in a cup of hot water and tell him to "drink his tea, Dearie." I had apricots for dessert and ate a great number; that they had begun to ferment was no longer a drawback—at least they tasted of something.

They are going to oblige one to have cards for clothes now. Billy says he wants to know how the city authorities are going to know the next time he needs a new undershirt.

June 12th—We went to the Zoo to see the holiday crowd. Every soldier who had a sweetheart, and every mother and father with a child, was there. I am sure they must be skimping dreadfully on the meat for the lions and tigers—the poor beasts were so thin, all their bones were sticking out, while those disgusting hippopotami, who feed on hay, looked as if they would explode if they ate another mouthful.

June 17th—"General Moltke drops dead," on the front page of the newspaper, and "Czernowitz falls," under him. Even though this is the third time for Czernowitz, there is still some interest shown in the evacuation. It strikes me that, for a country which every one said was dead and gone, and which they had begun to divide up and partition around, the Russians are doing pretty well.

Billy has been seeing bankers lately, to try and find out about the finances of the country. He talked to Havenstein, president of the Reichsbank, two hours yesterday, and with Von Gwinner, director of the Deutsche Bank, one hour. I asked him how they treated him.

"Von Gwinner saw through me," he said, laughing. "He asked me to tea but Havenstein called out all the *gebühren* in his employ and set them to making statistics for me!"

Von Gwinner was in a great rage with Mr. Jimmy Speyer for writing him a note, saying:

"Dear Arthur:

I am sure you must be in need of food. We are sending you several cases of things by the next boat."

"The English took everything, of course," said Von Gwinner, "but the idea of his thinking I was in need of food!"

WILL U-BOAT WARFARE CONTINUE?

June 20th—Billy and I went to see Zimmerman. He, with Von Bethmann-Hollweg, Von Jagow, Helfferich, and Falkenhayn, are running Germany. Zimmerman is a large, blonde man. His forehead is exceptionally high and his cheeks much scarred by sword slashes. He is genial, calm, and, although the busiest man in the Empire, unhurried.

"I have just been seeing some bankers," said he. "We are negotiating another loan for our Turkish friends. Those people are always in need of money."

Billy said it was a great imposition for us to take up his time, as he was probably very busy. He laughed and declared he was glad to see us. I told him he was like Israeli, who said he was not "unusually busy to-day," but "usually busy."

Billy asked if the U-boat war was likely to be resumed.

"That depends on Wilson," answered Zimmerman. "If he pushes England into obeying international law, we will not resume it. If he goes on doing nothing, as he has for some time, I cannot answer for what our military and naval authorities will do."

I said that Wilson was not likely to move

a foot before the elections, and would Germany wait until November?

Zimmerman shrugged his heavy shoulders. "That is a long time," said he. "We have enough submarines now."

I asked him if he didn't think the war was going on and on, because no one would speak frankly of peace, and he said yes, but that Germany had said all that she possibly could.

"All that is done if we mention peace," said he, "is for every one to shout: 'The Germans are beaten; they can't go on any longer!'"

Billy asked him whether peace could not be made now if the biggest men from each country were brought together.

"Ah!" said Zimmerman. "If it were possible to have a small, absolutely secret meeting, then we probably could make peace now, but how is that to be managed? We cannot speak out frankly to the whole world, and how can one negotiate except publicly?"

We asked him whether Germany looked for a long peace after the war, and whether it would be on the grounds of great military strength and strong boundaries, or on the basis of an international, conciliatory body, or a treaty?

He answered that nothing short of a United States of Europe would amount to anything, and seemed to possess the usual German skepticism of treaties.

"We will have to have a United States of Europe some day, to enable us to compete economically with America. That may come in eighty or one hundred years, but not in our lifetime. If you would really develop your natural resources, we in Europe would be helpless."

June 22d—It is rather hard for me to find out how the war is taught in the schools, as I don't speak German, but, as far as I can tell, it is different in different schools. They are not allowed to speak of peace, but the teachers read the newspapers to the pupils. Of course, what they read depends on the newspapers they take. In one school I know of, the children go through a short hate ceremony. When the teacher says: "Gott strafe England," the pupils answer: "Gott strafe es." They are still taught English and French,

but they are not allowed to use a word of either language outside of their lesson.

June 26th—We dined last night with the W——'s. A German officer, Lieutenant M—— by name, who had just come from Belgium, where he was one of Von Bissing's aides-de-camp, said the General quite considered himself as King of Belgium for the time being—which he virtually is—and lived and acted as such. M—— says Von Bissing sympathizes so greatly with the conquered country that he is doing everything possible to help it along, and he laughingly added that he believed the General was so jealous for its welfare that he would even defend it against Germany.

THE BARONESS VON BISSING

June 27th—I went to Baroness von Bissing's to tea. Oh, welcome was the hour and her comfortable chair! She is small, with finely chiseled features, her movements are quick, like those of a highly bred animal, and she is rather excitable.

We skipped from topic to topic as lightly as gazelles. From Essen we jumped to the Allies' note to Greece.

The Germans apparently hate Wilson and Roosevelt equally—the one for what they say are his pro-Ally tendencies, and the other for having turned against his former friends and insulted them, after accepting their hospitality.

"Serbia and Montenegro are full of people that need to be punished, but Italy—Italy!" said Frau von Bissing, with her pretty nose in the air: "Is a nasty little dog that has done something dirty and must be kicked out!" She emphasizes her words so heatedly when in earnest that I never can help laughing.

We turned back to the invasion of Belgium.

"England is a disgusting hypocrite," said my hostess emphatically. "France is not so bad; we do not hate her, but England is in this war solely for money. It is a pleasant little joke of theirs, about our invading Belgium first, but I know that the English and the French were there before."

Now, if the Governor of Belgium's wife

believes this so earnestly, one may imagine how firmly the rest of Germany believes it.

July 1st—Went to the Von G——'s to lunch. It was Von G—who put through the Bagdad railway scheme. Von G—— said the victor in this war would be the nation which declared bankruptcy two weeks after all the rest! He expects they will all be taxed to the verge of poverty when the war is over, but believes Germany can hold out the longest.

Dined with Baron von M—— Tuesday night at the Automobile Club. He is a fraud and Count M—— with him, and I hope to see them both soon to tell them so. There was a crowd in Leipziger Platz when I got there, and the two men were standing at the window. I asked what it was and they said: "Nothing, nothing, only the

usual people going home from work." Now, whether they knew or not, I am not sure, but it really was the Socialists, publicly demonstrating their disapproval of the imprisonment of Liebknecht for two years and a half. That shows what a Berlin riot is. I looked on and never knew it! We've heard from Freiherr von B—— that there was a really recognizable one in Düsseldorf. All the women went to the City Hall and demanded more meat and potatoes. The Mayor stuck his shaved head out of the window and tried to calm them with tales of beans and peas, but they shouted they did not want them. They wanted potatoes, and, when he said he hadn't any, they smashed all the windows that couldn't resist bricks.

"That's just like the poor!" said Von B——, "they won't eat anything except potatoes."

THE LAST WORD IN PORK

THE AMERICAN SYSTEM OF ERECTING BUILDINGS, NOT FOR POST OFFICE AND COURT HOUSE USE, BUT AS MONUMENTS TO NATIONAL GREATNESS AND INSPIRATIONS TO PATRIOTIC SENTIMENT—ARTISTRY OF THE NEW BUILDING BILL

BY

BURTON J. HENDRICK

IN THE last few years the **WORLD'S WORK** has published many articles describing the pork barrel tendencies of our national legislature at Washington. The magazine has devoted much space to the great pork barrel of the Northern states, the pension list, to the preëminent pork barrels of the South, the public building and river and harbor bills, and to many minor methods of extracting federal money for local purposes, such as army posts, navy yards, claims, and the like, in which most sections of the Nation obtain a "slice." Other periodicals have called public attention to these abuses. In the last year, indeed, the pork barrel has become an every-day topic of conversation. The newspapers have discussed it in thousands of indignant editorials; they have found

it a subject as popular and common as were municipal graft and corporation corruption a few years ago.

For one, however, the **WORLD'S WORK** does not view the practical results with any sense of editorial complacency. Journalism may work wonders in developing public opinion, but apparently it has little influence with Congress. Congress showed fair moderation in the days when magazines and newspapers said little about pork barrels. It displayed the utmost lavishment when these organs of public opinion became most strident in their outcries. These same local appropriations also bear the same inverse ratio to the state of the public treasury. The record shows that when Uncle Sam is fairly easy in a money sense, the pork barrel does not flourish so well. Whenever he faces a deficit, and

taxation starts piling up as never before in days of peace—that is precisely the time that the pork barrel statesmen select for their most rapacious and impetuous raids.

Thus the first session of the Sixty-fourth Congress passed pork barrels to the tune of nearly \$300,000,000. It not only developed, to a high state of perfection, all the time-honored schemes of this kind, but invented several new ones. Almost the first bill which the House passed, when it began its new session in December, was an entirely new pork barrel. However we may criticise the recklessness of our Washington statesmen in spending the "people's money," as one of the greatest living pork-barrelists expresses it, we certainly must admire their assiduity and ingenuity. The short session of the Sixty-fourth Congress opened on a Monday morning with appropriate ceremonies. The President delivered his message, and both houses settled down to business. Immediately the flood of private pension bills began to swamp the legislative Chambers. All these had practically the same title: "A bill (No. 150) granting a pension of \$50 a month to John Smith in lieu of that which he is now receiving." Thousands of these little manifestations of federal bounty, taking up page after page of the *Congressional Record*, were introduced. Then came a new "omnibus" measure appropriating about \$1,000,000 to build fish hatcheries in certain specified communities. Many representatives denounced the measure as a "pork barrel"; the House, however, passed it by a large vote. The mere fact that this fish hatchery bill was cast in "omnibus" form sufficiently proved, as I shall show, that its character was essentially porcine. In the phraseology of Congress, "omnibus" is merely another word for "pork."

PORK AND PRE-ELECTION EXPEDIENCY

This disease of our national legislature can best be described and illustrated concretely. The present Congress has dramatized it to perfection in a measure which is now attracting the attention of the newspapers. This is the great, long-awaited public building bill of 1917. In reality, this is not the building bill of 1917, but of

1916. Congress did all the important work on this measure in the last session. Chairman Clark, of Florida, introduced this great masterpiece in June of last year. But he did not do this with any expectation of immediate action. Indeed, he specifically informed Congress that he did not expect to press the matter then, but would bring it up seriously as soon as the Houses reconvened in December. Why did Mr. Clark postpone the matter until this year? No great mystery enshrouds this question. The Democratic Party, in June, was facing a national election in November. Already, in its militia pay bill, its good roads measure, its nitrate plant, its armor-plate factory, and its "spring pullet pension" act, it had accumulated about as many sins as would safely stand the strain of a Presidential campaign. Moreover, there were whispers that President Wilson would not "stand for" this public building raid. When Congress assembled last December, however, this political crisis had passed and the public building bill could now be "put over" without fear of political consequences. Hardly had the lower House finished with its fish hatcheries, therefore, when Mr. Clark again manifested his predominant interest in the architectural future of the Nation. Though not a particularly imposing figure, intellectually or personally, Mr. Clark resembles the Emperor Augustus in at least one detail. It was the boast of Augustus, it will be remembered, that he found Rome brick and left it marble. Likewise, the passion of Mr. Clark's life is apparently to have a train of magnificent marble "monumental" structures scattered all over the surface of the Nation—and particularly in the Southern States.

If we wish the "psychology" back of this type of legislation Mr. Clark's career will furnish it. Probably not many Americans, outside of the Florida district from which he hails, have ever heard of Mr. Frank Clark. His modest biography, as set forth in the *Congressional Directory*, contains few evidences of greatness. But that is no discredit; in this, Mr. Clark merely typifies the average humdrum person who represents an American con-

stituency at Washington. His speeches reveal him as a man of extremely commonplace intellect; in particular he is a passionate devotee of the turgid oratory that the smaller Congressional districts have not yet outgrown. His political career contains two facts of the utmost significance. The first is that he comes from Florida; why this has especial pertinence will be subsequently explained. The second is that he entered Congress in 1905. That is about twelve years ago; no long period, it may be thought—still it explains why Mr. Clark is the Congressional generalissimo of public building appropriations. Mr. Clark does not hold this important post because he is a genius in finance, in Congressional procedure, or in architecture. He holds it because he has been in Congress twelve years—that is the only reason. When Mr. Clark entered he was appointed to the Public Buildings Committee. Death, resignation, and political calamities at home have gradually, in the course of twelve years, removed his senior members. When the Democratic Administration came into power, lo! Mr. Clark's name led all the rest on the Public Buildings Committee, and so, by the brute power of seniority, he found himself directing its future destinies.

POST OFFICES AS "PATRIOTIC" MONUMENTS

Evidently the job has not been an uncongenial one. As Mr. Clark has several times publicly expressed his ideas on public buildings, the fairest appreciation of his attitude can be obtained by quotation. In the minds of most people, Uncle Sam erects public buildings for a definite purpose. He carries on a postal business, he holds court, and he maintains land offices, for the proper conduct of which activities public buildings are clearly needed. So long as these buildings serve this purpose and serve it economically, the construction of substantial edifices is good business. But, in recent years, there has arisen what may be called the "patriotic school" of public building spenders. These philosophic Congressmen believe that post offices and court houses are built, not to help in the transmission of mails and in dispensing justice, but to furnish lessons in

patriotism. These palaces thus become rather "shrines," with "the flag on top," as Senator Sutherland expresses it, their chief purpose being to inspire love of country. Mr. Clark, who is himself a leader in this school of thought, has expressed the idea better than any one else. "This is the greatest Government on earth to-day," he says. "We can unite the affections of the people all over this glorious land in a closer bond of union by rearing in their midst an edifice for the transaction of the public business which, while being useful, will at the same time remind them of the glory, the majesty, and the power of this great Republic." "The fathers of this Republic," said Chairman Clark's report, submitting this new building bill, "never established it with a view to converting it into a profit-making enterprise, but expected to pay for the right to enjoy life, liberty, and the pursuit of happiness. We respectfully submit that the mere matter of dollars and cents ought not to be a controlling factor in determining upon a course which makes for the betterment of our citizenship."

This, then, is the idea, and this point of view makes the public building bill entirely plausible. The newspapers which rave over the fact that the 741 people of Fallon, Nev., have a \$55,000 post office, that Evanston, Wyo., with 2,500 inhabitants, has a \$185,000 building, that Gainesville, Fla., with 6,000 people—Mr. Clark's own town—has a \$150,000 structure, simply do not understand the situation. These marble "monuments" are not court houses or post offices; they are magnificent temples dedicated to "the betterment of our citizenship." They serve, in these small communities, a purpose comparable to that of the Statue of Liberty in New York Harbor. They are not utilitarian, in a vulgar sense; they are symbolic. Mr. Clark accepts the full consequences of this exalted conception. Since these buildings are intended to teach good citizenship, there is every reason why the most microscopic village should possess one. It is just as important that the 420 residents of Sundance, Wyo., and the 750 residents of Vernal, Utah, be good Americans as the residents of Boston and Chicago. Mr.

Clark believes so, too. "I maintain," he says, "that a building should be constructed wherever a Federal Court is held, even if it should be held in a little cross-roads town. And right here let me remark that . . . there are a few votes in the cross-roads town as well as in the metropolitan cities."

THE BURLESON-McADOO STANDARD

Still there are hardy and materialistic persons who advocate other ideas. Among them are Postmaster General Burleson and Secretary of the Treasury McAdoo. These officials have most to do with public buildings. Mr. McAdoo has to construct and maintain them; Assistant Secretary Newton, who has charge of this work, has done it exceptionally well. Mr. Burleson, as Postmaster General, uses these federal structures more than does any other official. Whatever these gentlemen have to say on the subject certainly has an expert value. And they do not agree with Mr. Clark at all. Perhaps that is because they approach the subject from a different point of view. They do not have that fine idealistic spirit that makes Mr. Clark such a resplendent figure. They are gross and sordid. They regard public buildings, not as monuments to a sublimated patriotism, but as more or less mundane affairs for the every-day transaction of prosaic public business.

Both Mr. McAdoo and Mr. Burleson recently served on a commission which investigated this whole building business. Chairman Clark served on this same committee and signed its report. In this report Mr. Burleson proposed a standard which should regulate all future enterprises of this kind. No town, he insisted, should have a public building that did not meet three requirements: it must have a population of 5,000, postal receipts of \$15,000, and it must pay a rental for its present post office of at least \$1,000 a year. Mr. McAdoo increased Mr. Burleson's limit on receipts, recommending that no town that did not do a business of \$25,000 a year could qualify.

The Burleson-McAdoo standard may be accepted as the business, non-political standard, as opposed to the Clark patriotic

"betterment of citizenship" standard. It represents what the Government's policy should be if it were erecting buildings solely with reference to their utility for business purposes, and not as political assets to the Congressmen proposing them.

I said above that Mr. Clark's biography reveals the important fact that he hails from Florida. Just how important this fact is, the 1917 building bill discloses. Some good angel has apparently been watching over Florida for years. In particular the federal building statistics of this state show a most praiseworthy enthusiasm for justice. Indeed, if we are to base our conclusions on governmental architecture, the fact is inescapable that Florida has more justice to the cubic foot than any other state in the Union. The report of the Public Buildings Commission, already referred to, discloses that Florida has ten government court houses—also containing post offices—which have cost \$1,875,000. So nobly has Florida enforced the dictum of its favorite son that "a building should be constructed wherever a Federal Court is held, even if it should be held in a little cross-roads town." Florida's splendid zeal for justice compares most favorably with the backwardness of other states. California, for example, is a state much larger and much more populous than Florida. But California has only four court houses—against Florida's ten! Ohio worries along with five and Illinois with six! Yet Florida is so small that it has only four Congressmen, while California has eleven, Ohio twenty-two, and Illinois twenty-five.

FLORIDA'S LITTLE-USED COURT HOUSES

There is only one fact more startling than Florida's fine collection of court houses—and that is the small amount of business done in them. Apparently their very existence frightens away litigants and evil-doers, for they are very seldom used. Here are the three towns of Fernandina, Marianna, and Ocala. Uncle Sam's investments in public buildings in these places represent \$719,000. The court rooms they contain are open for business respectively four, three, and five days a year! Here is a total of twelve days of court business

divided among three towns and three separate buildings. Congressman Frear has made certain calculations, based upon maintenance and upkeep charges, whereby he finds that it costs the Government \$3,000 for every day court is held in these places. But, of course, as Chairman Clark would say, the purposes of these court houses is not the holding of court; what they really do is "to remind us of the glory, the majesty, and the power of this great Republic."

But these building operations belong to the past; let us see what new things Florida has under way. In the 1913 bill, Chairman Clark's state had eleven "projects." Only one of them met the requirements laid down by Postmaster General Burleson and Secretary McAdoo. Only one was in a town that had the requisite population of 5,000. Practically all proposed building meant that Uncle Sam would assume fixed annual charges of about \$4,000 in place of an existing rental of \$300 or \$400. But Florida is still unsatiated. The 1917 bill, now before Congress, carries seven Florida items. Not one of these items meets the requirements set forth by Mr. Burleson!

"I am in favor of reasonable preparedness," says Chairman Clark. "But if preparedness means stoppage of all progress, if it means that the works of internal improvement must cease, then I am against preparedness, tooth and nail, forever and a day."

"I am a disciple of Andrew Jackson," said Chairman Clark on another occasion, "and I believe that 'to the victor belongs the spoils.'"

THE STANDARD IGNORED

But other states than Florida have profited from the "betterment of citizenship" idea, as opposed to the commercial and vulgar business notions of Secretaries Burleson and McAdoo. For example, there are Georgia, Kentucky, Alabama, and Tennessee. Georgia has no less than nineteen "projects" in this pending bill. There is hardly one of them that would be "taken care of" if the Burleson-McAdoo standard prevailed. In practically every case the Government is assuming fixed

charges of \$2,000 or \$3,000 in place of the \$200 or \$300 annual expenditure that now provides adequate facilities. Let us look at Kentucky, a state that always gets its knees deep into the trough. It has waded nearly over its head this time as the pending bill gives it thirteen new buildings or sites. Not one of these places would get a solitary "project" under the Burleson-McAdoo system. One—the town of Hazard—has a population of 537, yet its appropriation is \$40,000. This is about \$75 per capita. If New York City had a public building on the same per-capita basis as Hazard, it would cost the Government about \$375,000,000—about as much as the Panama Canal! Alabama is "recognized" to the extent of ten "projects," very few of which would meet the accepted test. Tennessee has nine buildings or sites, not one of which passes the McAdoo-Burleson examination, for all are in towns that have a population smaller than 5,000. The Government obtains satisfactory quarters in all for \$300 or \$400 rental.

A WASTE OF \$28,000,000

But it is not necessary to particularize. A survey of this 1917 "monumental stimulation to patriotism" discloses that the application of the McAdoo-Burleson standard would blue-pencil 80 per cent. of the items. According to the gentlemen most competent to judge—and these gentlemen are good Democrats, too—just about \$28,000,000 of the \$35,000,000 which Congress is now proposing to spend is simply a waste of the public funds.

How is it that appropriations like these ever get through Congress? Why is it that California, Wisconsin, New York, and other states do not rise and stop these raids on the public treasury? The answer requires an insight into the artistry of such appropriations. This 1917 bill is perhaps the most symmetrical specimen of the kind ever put before the national legislature. A careful survey pronounces it so perfect that the experienced observer cannot see how it can fail to pass. The thing is a miracle of legislative log-rolling—that is the whole story. The one magic word is that already used—"omnibus."

All pork barrel bills are now "omnibus bills." Time was when Congress voted upon each separate bill providing a pension, authorizing a river and harbor improvement, or erecting a public building. Then New England or the Middle West might have had something to say about the "monumental" enterprises of Florida and Georgia. Probably that was the reason why, in pre-omnibus days, expenditures were not so lavish. But, about ten years ago, this new modern system made its appearance. The procedure on public buildings now is its finest expression. The legislator introduces his individual bills providing for court houses and post offices in his "destrict." In preparation for this 1917 measure, such individual bills were put in, providing for about \$100,000,000 worth of new and wonderful architecture. Then Chairman Clark and his associates on the Buildings Committee get to work. They hold "hearings" and ultimately decide what villages and towns are to get "slices." These items are all then lumped together in one measure—hence the name "omnibus." The high strategy of this procedure is almost Germanic. Mr. Jones, of California, cannot vote separately on a public building in Arkadelphia, Ark. He has to vote upon a comprehensive measure containing 300 or 400 items, of which Arkadelphia is merely one. Mr. Jones may look askance at Arkadelphia's "project" and be tempted to vote against the whole bill because it contains that item. But the trouble is that this "omnibus" measure also contains an item for a post office in Mr. Jones's own district. So, in order to get his "slice" he votes for 300 or 400 other items. At the present moment Congress is discussing a federal law to end corrupt practices at election. But, in these "omnibus" pork barrel bills, Congressmen are buying and selling one another like dumb beasts right on the floor of the national legislature.

A "SLICE" PER CONGRESSMAN

This 1917 public buildings bill is a masterpiece of geographical distribution. It succeeds in balancing the claims of rival states and rival districts with the nicest sense of legislative equilibrium. There

is something uncanny in the way that the number of new buildings each state requires coincides so closely with the number of Congressmen it sends to Washington. Alabama has ten districts, Alabama gets ten new buildings! Arkansas has seven districts and gets eight buildings. Delaware has one Congressional district; it gets one building! Idaho has two districts and gets two buildings. Louisiana has eight districts, eight new buildings! Maine has four Congressmen and Maine gets four buildings. Massachusetts has sixteen Congressmen—fifteen buildings. Why is it that the number of new "projects" corresponds thus mathematically with the number of Congressmen? Is it possible that those states, on a business basis, should each year need just as many new "monuments" as they have members in Congress? No, the thing is too apparent. The votes of these Congressmen are needed to pass the bill; and what Congressman lives who is so brave as to vote against an "omnibus" measure in which his locality is "recognized"?

WASTE THAT IS SYSTEMATIC

Let us not assume, however, that Congress has no definite policy in the erection of public buildings. It has developed a system that works with clock-like regularity. We are frequently told that the whole procedure is haphazard; that Congress goes about erecting buildings in hit-or-miss fashion. The statement is a base slander. Congress has a perfectly defined policy in the matter. That policy is this: to erect post offices and court houses where they are not needed and to refuse to erect them where they are. To such a pass has the "betterment of citizenship" idea led us! The report of Mr. McAdoo and Mr. Burleson brings that fact out clearly. They have taken the stand that no town with less than 5,000 should have a public building. Therefore, the reasonable plan would be to put up buildings in towns that have this population. But the recent sessions of Congress have flatly turned their backs on these communities, and have devoted most of their attention to "cross-roads towns"—the expression is Chairman Clark's own. The last two Con-

gresses have provided 1,479 "projects." Several hundred are for towns that have less than 5,000 people and 216 are in towns that have less than 3,000. Meanwhile, there are 284 cities which have a larger population than 5,000, in which no public buildings have ever been built or authorized. There are 66 cities with a larger population than 10,000 whose people have to worry along without those lessons in "the betterment of citizenship" which a federal structure inculcates. Yet there are states in which there is not a single town of 5,000 that is unprovided with such a "monument." These are Arkansas, Delaware, Florida, Georgia, Idaho, Iowa, Maryland, Mississippi, Nebraska, Nevada, New Mexico, North Carolina, North Dakota, South Carolina, South Dakota, Tennessee, Utah, and West Virginia. States that have only one city with 5,000 people unprovided for are: Alabama, Arizona, Colorado, Kansas, Louisiana, Montana, Oregon, Virginia, and Wyoming. States with only two such places still not "taken care of" are Kentucky, Oklahoma, Texas, and Washington. The inference is clear—we are putting up buildings where they are not needed and neglecting places where they are. Let us find an analogy in a privately conducted business. Imagine that the New York Central Railroad neglected its stations at New York, Albany, Syracuse, Utica, Rochester, and Buffalo and devoted all its attention to "monumental" structures at Oswegatchie, Little Falls, Herkimer, Skaneateles, and Paddlefords. In that case it would be following precisely the same policy as Congress in public buildings.

This post office grab-bag, as I have said, is the great pork barrel of the South. But let us introduce no sectional sentiment in the discussion of this great issue. The North also has its pork barrels—especially the great annual pension expenditures. The WORLD'S WORK has denounced these wasteful appropriations just as emphatically as it has this pending building bill, and will continue to do so. The pork barrel tendency has no geographical limi-

tation; it is inherent in human nature itself. Just now its manifestations take the form mainly of wasteful appropriations in Southern and Western states. The prevailing attitude of the Democratic majority is that, after many years of privation, its turn at the Treasury has now fairly come. That may be good party politics, but it is barely patriotism.

SENATOR TILLMAN'S CONVERSION

Secretary McAdoo and Secretary Burleson, themselves Southerners, are leading the fight against this measure. Another famous Southern statesman, Senator Tillman, has come to his senses. When the river and harbor bill was under discussion last session, Mr. Tillman devoted a long speech to a subject which he called "stealing." He meant making appropriations on the pork barrel system. He reviewed his whole history on the issue, admitting that he had himself many times insisted upon his "slice." "You see," he said, "I am taking a farewell, as it were, and this is my valedictory on the stealing business."

"It is as though," he said, referring to the pork barrel system, "we were wild and crazy over local affairs and have no broad national grasp at all. I shall be criticized in South Carolina for voting against this bill. Many of our Congressmen who have small pieces of pork in this barrel will dislike very much my opposing it, but I have found truth and honesty of purpose in the long run to be the very best policy. When the people of South Carolina understand what I am doing here they will applaud me for my moral courage and I can afford to let my critics continue to howl. The slogan has become very common: 'You vote for my steal and I will vote for your steal.' This has had much to do with the discredit into which Congress has fallen. I do not want my share of the stealing in this bill! I should be ashamed to go home to South Carolina and tell my people that I had voted \$300,000 for South Carolina. If this bill does pass I pray God the President will veto it."

MAN AND

HIS MACHINES

USEFUL INVENTIONS



FACILITATING TELEPHONE CONVERSATIONS

AN ELECTRICAL engineer of New York has perfected a device by the use of which in carrying on a conversation over the telephone both hands are left free to consult records or jot down memoranda as

the case may be. The apparatus, which is entirely separate from and not fastened to the telephone instrument, consists of a small, circular disk, somewhat similar to the end of the telephone receiver itself, from which run a pair of tubes which are clamped in the ears, somewhat as in a stethoscope. When the conversation is begun the operator merely places the



FELLING TREES BY MACHINERY

A machine driven by steam and operated by two men which fells trees with a minimum of labor, time, and waste is being used successfully in England



A NEW USE FOR THE AUTOMOBILE

A simple attachment for automobiles by which the motor of the car performs many useful functions, such as running a threshing machine, a corn husker or cream separator



A COMBINATION SHOE BRUSH

The blacking is contained in the handle of the brush, and the under side is divided into two sections, one for rubbing on the blacking and the other for polishing the shoe

receiver on top of the disk, inserts the hearing tube in his ears, and his hands are free to write down the conversation or anything else that may be desired

A MECHANICAL TREE FELLER

A MACHINE operated by steam which fells trees with a minimum waste of time, labor, and material has been successfully used in England. The machine is easily operated by two men, makes a clean cut close to the ground, and has cut trees varying from forty-two to forty-eight inches in diameter in about six minutes. The machine is easily moved from tree to tree and has a small, portable boiler which can easily be moved about by one horse and can be kept stoked by the men operating the tree feller. By means of an interchangeable frame the machine can be converted, in a few minutes, into a cross-cutting machine so that it cuts logs into desired lengths in even less time than it takes to fell the tree.

A POWER ATTACHMENT FOR AUTOMOBILES

BY MEANS of an easily adjusted power attachment for automobiles the automobile can be made to run a thresher, cream separator, corn husker, water pump, and perform many other useful functions around the farm. The attachment consists mainly of a drive shaft connecting to the front of the crank shaft through a flexible joint, with a pulley to which is attached the driving belt. A fan in front of the



KEEPING THE MOTOR WARM

A little electric heater which, at a cost of less than a cent an hour, if placed near the engine of an automobile in a garage, keeps it warm and eliminates the trouble of starting a cold engine

automobile radiator keeps the engine from overheating. The pulley runs loose on the shaft, so the belt may be slipped on, then the load engaged by throwing in a clutch which engages the pulley. There is no more wear on the car than there would be in driving along the road at about twenty miles an hour, and the only wear is on the motor itself.

A HANDY SHOE BRUSH

A BOOT brush that contains the paste, brush, and polisher in one device is a handy innovation for the household or business office. The under side of the brush is divided into two parts. One holds the bristles with which to apply the blacking and rub it on the shoe and the other half holds the device for polishing the shoe. Under the cover is a receptacle for the blacking, which is applied to the shoe by turning a key, conveniently placed in the side of the brush. When the tube of blacking is exhausted the cover slides back and a new tube is inserted.

OBVIATING CHILLED MOTORS

ONE of the inconveniences of motoring in winter—that of starting an engine that has been chilled in the garage—has been eliminated by the use of a small electric heater which operates at a cost of less than a cent an hour and does away with the need and expense of keeping the entire garage heated.

The heater is connected to an electric light socket



FOR THE BUSINESS OFFICE

From two to forty sheets of paper can be fastened together by this machine, which will make and clinch 15,000 staples from one spool of wire



IMPROVING THE PIE

A new-style pie plate, by means of which the ordinarily soggy, indigestible bottom crust of a pie can be baked as light and flaky as the upper crust

and is simply placed on the engine under the hood of the car, where it generates sufficient heat to prevent the engine's chilling, saving the application of hot cloths to the carburetor and the manifold, and preventing scoring of the bearings and other undue wear on the engine caused by an irregular flow of cold oil.

FOR FASTENING PAPER

FOR the office where many papers are constantly to be filed there is now on the market a useful and economical little paper fastener. Each machine is equipped with a spool of stitching wire, about 1,250 feet in length, which will make and clinch 15,000

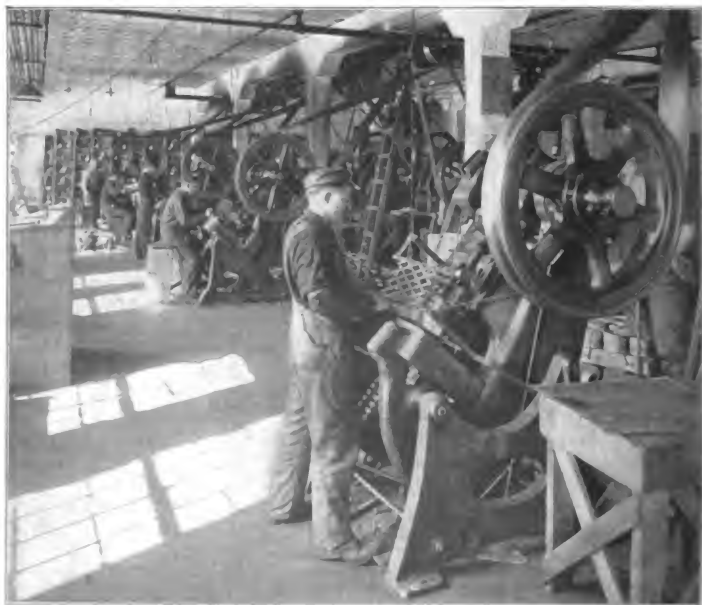
staples. From two to forty sheets can be bound securely together, without any adjustment of the machine, by pressing the lever down sharply.

AN IMPROVED PIE PLATE

A NEW plate for baking pies consists of two pans, both perforated, one inside the other. The advantage of having two pans lies in the fact that the crust of a pie thus baked will be of an even thickness throughout and the plates, being perforated, permit of a free circulation of air, so that the bottom crust need no longer be soggy and heavy, as is often the case in pies baked in the ordinary manner, but can be baked as light and flaky as the top crust.

AN ACCIDENT PREVENTER

A MEANS of protection for workers on presses has recently been devised by the use of an easily adjusted little lattice-work gate which lets down when the operator throws the clutch in to operate a press. Except for a brief instant between the pressing of the treadle and the tripping of the press the gate never interferes with the workmen and, being made like a lattice, the operator sees through it clearly at all times. The moment the work is completed the gate springs back to a folded position out of the way.



SAVING FINGERS OF MACHINE OPERATORS

Protection for men working on presses is afforded by a device which lets down a lattice-work gate when the machine is to be operated

The World's Work

ARTHUR W. PAGE, EDITOR.

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MR. JAMES W. GERARD

WHO FOR TWO YEARS AND A HALF AFTER THE OUTBREAK OF THE WAR WORKED WITH EXCEPTIONAL ABILITY AT THE DIFFICULT TASK OF TRYING TO DEFEND OUR RIGHTS AND AT THE SAME TIME MAINTAIN RELATIONS WITH A FOREIGN GOVERNMENT GIVEN OVER TO UNSCRUPULOUS METHODS OF DIPLOMACY AND WARFARE

THE WORLD'S WORK

MARCH, 1917

VOLUME XXXIII



NUMBER 5

THE MARCH OF EVENTS

WHEN Germany announced in her original war zone proclamation that her submarines would sink passenger and freight ships, regardless of the loss of life, the United States warned her that we should hold her to "strict accountability" for the loss of our citizens.

After the *Lusitania*, we told the German Government that the United States would contend for the freedom of the sea "from whatever quarter it is violated, without compromise and at any cost."

We have had much argument and discussion since then, but the main question is just the same—with the new blockade as with the old.

Under international law our citizens and our ships, when not carrying contraband, have a right to proceed unmolested to any port not effectively blockaded—and the Germans have never effectively blockaded any port.

The old treaty with Prussia even gave us the right to send anything to belligerent ports in our ships (the *Housatonic*, for example) without danger. It says:

The free intercourse and commerce of the subjects or citizens of the party remaining neuter with the belligerent Powers shall not be interrupted.

On the contrary, in that case, as in full peace,

the vessels of the neutral party may navigate freely to and from the ports and on the coasts of the belligerent parties, free vessels making free goods, insomuch that all things shall be adjudged free which shall be on board any vessel belonging to the neutral party, although such things belong to an enemy of the other:

And the same freedom shall be extended to persons who shall be on board a free vessel, although they should be enemies to the other party, unless they be soldiers in actual service of such an enemy.

But aside from this treaty and aside from our championship of all neutral rights at sea, there still remains the fundamental question.

Germany has notified us that her submarines will not respect our rights at sea.

If we are to take up the sword of justice and defend these rights and with them the inviolability of treaties and international law, we shall be going over again the ground that brought England into the war.

In many quarters it has been questioned whether England's action was disinterested. Did she not really go to Belgium's aid to help herself? There is a similar query in our case. If we maintain our rights at sea, do we not thereby save our six-billion-dollar export trade which goes chiefly to the belligerents?

We do; but that is not our fundamental reason. We contend for our own rights and for a decent basis for civilization.



MAJOR GENERAL LEONARD WOOD

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COMMANDER OF THE EASTERN DEPARTMENT OF THE ARMY, AN UNTIRING ADVOCATE OF PREPAREDNESS AND UNIVERSAL SERVICE TO WHOM IS DUE CHIEFLY THE CREDIT FOR THE SUCCESS OF THE PLATTSBURG AND OTHER VOLUNTARY TRAINING CAMPS



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MAJOR GENERAL HUGH L. SCOTT

CHIEF OF STAFF OF THE UNITED STATES ARMY. "THE COUNTRY WILL NEVER BE PREPARED FOR DEFENSE," SAID GENERAL SCOTT, "UNTIL WE DO AS OTHER GREAT NATIONS DO THAT HAVE LARGE INTERESTS TO GUARD LIKE GERMANY, JAPAN, AND FRANCE, WHERE EVERYBODY IS READY AND DOES PERFORM MILITARY SERVICE IN TIME OF PEACE AS HE WOULD PAY EVERY OTHER TAX"



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MR. HERBERT C. HOOVER

WHO ORGANIZED THE COMMISSION FOR THE RELIEF OF BELGIUM AND HAS SPENT 250 MILLION DOLLARS SINCE THE BEGINNING OF THE WAR IN KEEPING THE PEOPLE OF BELGIUM AND NORTHERN FRANCE ALIVE. HIS WAS THE FIRST AND MOST EFFECTIVE FOOD DICTATORSHIP IN EUROPE



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MR. FREDERIC C. PENFIELD

ON WHOM, AFTER THE DISMISSAL OF COUNT DUMBA FROM WASHINGTON, FELL THE CONDUCT OF OUR RELATIONS WITH AUSTRIA-HUNGARY, WHOSE POLICIES DURING THE WAR BECAME MORE AND MORE MERELY AN ECHO OF GERMANY'S.



SENATOR GEORGE E. CHAMBERLAIN

A FIRM BELIEVER IN UNIVERSAL SERVICE, WHO FOR MANY YEARS HAS STRONGLY ADVOCATED
PREPAREDNESS IN THE FACE OF NATIONAL APATHY

FOR OUR RIGHTS AT SEA AND ALSO
FOR DEMOCRACY

THE German note to the United States on January 31st stated that German submarines would sink vessels on sight, American or otherwise, within certain zones. It reads:

After the attempts to come to an understanding with the Entente Powers have been answered by the latter with the announcement of an intensified continuation of the war, the Imperial Government—in order to serve the welfare of mankind in a higher sense and not to wrong its own people—is now compelled to continue the fight for existence, again forced upon it, with the full employment of all the weapons which are at its disposal.

This is entirely in accord with the Prussian military doctrine. These ships are impediments to German success—even as Belgium was—and, therefore, must be removed. If it could be done humanely, the German Government would prefer to do it that way; if not—

As a matter of expediency the German Government would have preferred to maintain friendly relations with us. But the Prussian doctrine of military government would not let any impediment stand in the way of its military success even if that impediment were founded on the rights of other nations, international law, or even the dictates of humanity.

After the *Lusitania* was sunk, the German Government made an evident effort to spare Americans, and Americans were killed only occasionally. This fact and the note which Germany sent us after the sinking of the *Sussex* made the American Government and a large part of the American people believe that the spirit which prompted the invasion of Belgium had been chastened by war. Ambassador Bernstorff spread the impression that Germany was much democratized by the war.

It was in this belief that the American Government made its moves for peace. But this belief was based more on an inveterate optimism concerning human nature than on concrete facts.

Even the note which Germany sent us after the sinking of the *Sussex*, and which we accepted as a pledge of the humane

and legal conduct of war at sea, was better evidence that the Prussian spirit had not changed than that it had. It said:

The German Government, guided by this idea, notifies the Government of the United States that the German naval forces have received the following orders: In accordance with the general principles of visit and search and destruction of merchant vessels recognized by international law, such vessels, both within and without the area declared a naval war zone, shall not be sunk without warning and without saving human lives, unless these ships attempt to escape or offer resistance.

But neutrals cannot expect that Germany, forced to fight for her existence, shall, for the sake of neutral interest, restrict the use of an effective weapon if her enemy is permitted to continue to apply at will methods of warfare violating the rules of international law. Such a demand would be incompatible with the character of neutrality, and the German Government is convinced that the Government of the United States does not think of making such a demand, knowing that the Government of the United States has repeatedly declared that it is determined to restore the principle of the freedom of the seas, from whatever quarter it has been violated.

The note told us that orders had been given to German submarine commanders not to sink ships without warning. It also said that these orders would be revoked if we did not force Great Britain to mitigate the blockade. In other words Germany would recognize our rights if we would do certain services for her. As Chancellor von Bethmann-Hollweg has since said, this offer was made then because Germany was not ready to enlarge her U-boat warfare. This was pointed out at the time. The American Government naturally did not acquiesce in the bargain proposed by Germany and said so:

The Government of the United States feels it necessary to state that it takes it for granted that the Imperial German Government does not intend to imply that the maintenance of its newly announced policy is in any way contingent upon the course or result of diplomatic negotiations between the Government of the United States and any other belligerent Government, notwithstanding the fact that certain passages in the Imperial Government's note of the 4th inst. might appear to be sus-

ceptible of that construction. In order, however, to avoid any misunderstanding, the Government of the United States notifies the Imperial Government that it cannot for a moment entertain, much less discuss, a suggestion that respect by German naval authorities for the rights of citizens of the United States upon the high seas should in any way or in the slightest degree be made contingent upon the conduct of any other Government, affecting the rights of neutrals and non-combatants. Responsibility in such matters is single, not joint, absolute, not relative.

Later, however, when it became evident that Germany wanted peace, the President did use his influence for peace, seemingly under the impression that it was not the old Prussian oligarchy but a changed and liberalized German Government with which he had to deal.

The German reception of the President's peace efforts should have dispelled any hope that the old Prussian ideas had been changed. If the refusal to discuss anything but a victorious German peace did not make this clear, the note of January 31st added sufficient evidence to do so.

That note did not contain the repudiation of any pledges given us as has been often stated, because no pledges had been given us. It did rescind the order to German submarine commanders and left the controversy where it was after the *Sussex* was sunk. Those people who had convinced themselves that Germany had reformed were surprised, but the German action in this case is exactly in accord with German action toward almost every other country and with previous German action toward us.

It is the idea underlying such conduct which in Europe has been called Prussian militarism. To many Americans this has seemed a somewhat vague term. In reality, it is entirely definite. Militarism is the condition in a State in which the military class control the policies of the Government. The Kaiser and the Junkers by the divine right of kings and the system of plural voting control the German Government, and both the Kaiser and the Junkers belong to the military class.

The Prussian doctrine of militarism is that Germany is destined to grow regardless of how this growth affects its neigh-

bors, and if the growth cannot be achieved in any easier way it must be done by war. Mr. Root in his address before the National Security League analyzed the Prussian idea with great clearness:

The present war which is raging in Europe was begun upon an avowal of principles of national action that no reasonable and thoughtful neutral ought to ignore. The central principle was that a State exigency, State interest, is superior to those rules of morality which control individuals. Now that was not an expedient; an excuse, seized upon to justify the beginning of the war; it is fundamental. The theory of the modern republic is that right begins with the individual. It was stated in the Declaration of Independence—that instrument which it was the fashion to sneer at a few years ago, but which states the fundamental principle upon which alone a free republic can live. It was that men, that individual men, have unalienable rights, among which are life, liberty, and the pursuit of happiness, and that governments are organized to secure those rights. The ancient theory, the theory of monarchies and alike of the ancient republics upon which they went down to their ruin, was that the State is the beginning, the foundation of right, and that individuals derive their rights from the State, and therefore, the exigencies of the State are superior to all individual rights. Now it was upon the continuance and assertion of that principle that the war in Europe was begun. And upon that principle it was declared that there was no obligation upon a nation to keep the faith of a treaty if it did not suit its interests. It was declared that there was no obligation upon a nation to observe the rules of that law of nations upon which all civilized States have agreed, *if it did not suit its interest*. Now mark, I am not discussing the right or wrong, I am stating the principle of action which was followed and which was asserted to be right. Upon that principle little Serbia was served with an ultimatum that demanded the surrender of her independence; and upon her failure to comply to the uttermost, she was overwhelmed. Upon that principle little Belgium that had no quarrel with anybody was served with a demand that she surrender her independent rights as a neutral and violate her solemn agreements to preserve her neutrality; and upon her refusal to surrender her rights and violate her faith, she was overwhelmed. And that principle is still maintained and asserted to be right. Now I am not referring to this for the purpose of discussing, I am referring to it because it bears directly upon our business here to-day. It

doesn't matter much what you and I think about these things; it doesn't matter that I think they were immoral and criminal, as I do; it doesn't matter that I think that, if that principle of national conduct is to be maintained and approved in this world, then liberty and civilization must die. What does matter is that approximately one-half the entire military power of this world supports that proposition. And I say to you and I wish I could say it to every American, if that principle of national conduct be approved in the struggle that is pending, be approved by the free people of America, be approved by the conscience of the civilized world, *then our American freedom will surely die, and die while we live.*

Our rights at sea now happen to get in the way of the German success; and consequently, entirely in accord with the Prussian idea, we are told to give them up.

If any other rights have stood in the path of Germany's "freedom of evolution," we can expect the same treatment unless there is physical force to show its impracticability. The immediate cause of our conflict with Prussian militarism is the question of our rights at sea, but the principle behind that is whether we are content to accept the continuation of Prussian militarism in Germany with the certainty that it will constantly expose the world to war. Our own exposure to this Prussian militaristic aggression is not as great as that of Germany's more immediate neighbors. Nevertheless, in the past we have been much more exposed than most Americans have realized. In the future our exposure depends on the outcome of this present war. If Germany should win a complete victory, the English fleet would no longer act as a guardian of the Monroe Doctrine and we should immediately have to face the existing demand of Germany for participation in the protectorate over Haiti and probably, also, for a hand in the settlement of Mexican affairs. If the war should end in a draw with Germany in control of Austria, Bulgaria, and Turkey, as it now is, we should probably have to decide whether to fight for the Monroe Doctrine or not a little later, for once Germany had time to organize the men and material from Hamburg to Baghdad under the Prussian system neither France nor England would care to face

Germany's power or try to thwart her "liberty of national evolution" on this side of the water.

There is still another aspect of the question which touches our ideals more than our safety.

In establishing the United States as a nation the Americans of that time founded the first great modern democracy. Its advantages appeared to them so obvious that they expected democratic government to spread rapidly over the world. In those days Americans were evangelical democrats. When President Monroe enunciated his famous doctrine it was founded on the belief that democracy should spread. Always we have welcomed the beginnings of democracy everywhere in the world—even to the thoroughly abortive democratic movement in Turkey a few years ago. It is a part of our faith and we had pleasantly assumed that the spread of democracy was going on irresistibly all over the world. We did not realize that in Germany autocracy was organizing itself for an effort which, if successful, would have rendered democracy and liberal government extinct in Europe and which would, therefore, have left us alone as a great liberal Power in the world. And if this happened, democracy, instead of spreading peacefully and irresistibly over the world, would have been relatively little better off than it was a century and a quarter ago. The history of the world has not progressed as far in the direction of liberalism as our ancestors anticipated it would or as we believed it had. Unless the Prussian idea is defeated, it will lose most of the progress it has made, for the democratic tendencies in Italy, Russia, and elsewhere will receive a fatal check if the democracies of France and England are defeated in this war.

If, therefore, we believe in the principles of liberty and democracy, our duty is plainly not only to safeguard our ships and men at sea but to do our utmost to see that the Prussian idea is exterminated.

In his address to the Senate on the kind of peace which the United States would like to see come out of this war, the President spoke for the spread of democracy, for that is what "government by the con-

sent of the governed" means. The whole programme which he outlined is a thoroughly liberal and American programme. And the British and French democracies agree with its principles. But the President expected to get this peace without victory, for evidently he still hoped that the Prussian military idea was not still dominant in Germany. In this hope it is evident now the President was wrong. The old idea still persists in Germany's Government, and the Government has successfully instilled a belief in and obedience to this idea into the large majority of the German people.

The question facing us now is whether we have the vision and courage to act for our ideals of democracy and civilization in doing our part to prove to the German people that their leaders have led them astray. The only way to do that is the way that Lincoln was forced to adopt to demonstrate that slavery was an economic fallacy and the disruption of the Union a political crime.

THE AMERICAN SPIRIT

NOTHING more gratified Americans in the early days of the German situation than the response made by our large manufacturers. Their representatives reached Washington, almost the first of all, after President Wilson's address before Congress. They immediately placed their plants at the disposal of the Government, and this offer came not only from the makers of munitions, but from all great establishments, such as the United States Steel Corporation, whose enormous resources could be readily transformed into a mighty arsenal. Even the most cynical hardly suggested that an appetite for profit explained this great enthusiasm. The fact that all American manufacturers are overwhelmed with profitable orders and that placing their resources at the disposal of Washington means a great financial loss, immediately disposes of any such idea. That these concerns stand momentarily ready to cancel contracts that yield them anywhere from 100 to 1,000 per cent. and turn their plants over to the Federal Govern-

ment, which will pay them only a moderate profit, certainly indicates remarkable progress since 1898, when profit-taking was by no means divorced from war.

The proceeding emphasizes another point, which many have ignored in the last few years. In case of war, American private industry is the ultimate force that must make us victorious. War to-day is not a matter primarily of men, even of heroic armies—indeed, the European conflict proves that individual heroism is almost the commonest human trait. English, German, French, Turks, and Bulgars all possess it abundantly, and certainly Americans on the field will not fall behind them. But Germany has so far gained the military advantage because she had organized the mechanical side of warfare most completely. The Allies made way slowly at first, because they had not done this, and they now make progress to the extent that they assemble their industrial resources. That will likewise be the story here, and the comforting thing for Americans is that we have unlimited wealth of this kind. If modern warfare is a matter of intelligently directed mechanics, the nation that produces more steel than all the rest combined and certainly does not lack high grade industrial organizing talent is not a foe that can be despised. And the fact that our manufacturers stand ready, without expectation of profit, to turn all these resources over to the President, augurs well for our success.

A NEED OF COÖPERATION

WHEN the break with Germany came, it found the Navy Department at odds with some of our shell manufacturers and many of our ship-building concerns. It is the Secretary of the Navy's task to get the best service of the shell- and ship-makers in the United States, and certainly this has not been done. The controversy between Mr. Daniels and the Bethlehem Steel Company throws much light on the situation.

Up to 1912, the Government had been paying the American manufacturers about \$500 for fourteen-inch pro-

jectiles. Mr. Daniels himself says that the price, in the absence of competition, has gradually "crept up" to this figure, which he regarded as exorbitant. In 1913, however, the tender of the American munition makers dropped to \$315. There is no difference of opinion as to the cause of this lower figure; indeed, Mr. Eugene G. Grace, the president of the Bethlehem Steel Company, told the whole story before the House Naval Committee a year ago. He frankly admitted that he had reason to believe that Hadfield's, an English concern, intended to submit bids, and he knew that this corporation would tender for less than \$500. The Bethlehem bid was, therefore, put at \$315, a price which, Mr. Grace testified, meant a loss to his corporation. When asked why he was willing to make projectiles at a loss, the Bethlehem president frankly said that he regarded it as good business to keep the English manufacturer out of the American market. The next year was 1914; England was at war and there was no likelihood of English competition. The Bethlehem Company, therefore, added \$100 to the price of fourteen-inch shells, which now became \$415. By this increase the American manufacturer hoped to retrieve the losses of the preceding year. When Mr. Daniels opened the bids for 1916, he was horrified to see that the price had jumped to \$539. Even allowing that the company was not bidding on fourteen- but sixteen-inch shells, this price seems excessive, and Mr. Daniels was quite justified in protesting against it.

The controversy involves other details, which it is not necessary to discuss at this time. The story of the Bethlehem Company's relations with our Government, as set forth above, discloses a sufficiently deplorable state of affairs. It is quite evident that the company and the Government have not maintained pleasant relations. That an American manufactory should have to drive out an English competitor by bidding in terms that involve a loss, then recoup itself the succeeding year by squeezing the Government, only to be beaten in turn two years later by the low bidding of its British rival—all this is ridiculous, unwholesome, and dangerous.

If the European War has taught us one thing, it is the supreme necessity of coöperation between the munition workers and the military departments. We have heard much in this country recently about industrial mobilization for war. Certainly the one thing that is indispensable is the closest and most friendly relationship between shell-makers and the Navy Department. Another fact that stands out above all others is that all these war materials should be made in the United States. These sixteen-inch shells are to be used on our new superdreadnaughts, the ships upon which, in time of war, our national safety would depend. Imagine the Nation at war and dependent upon a source of supply that is three thousand miles away! That is precisely the situation in which we shall find ourselves if we do not develop in the United States the resources for shell manufacture. We make no such shells now and shall make none unless our Navy Department can come to terms with our own manufacturers or establishes a plant of its own.

The underlying facts of the whole situation are reasonably plain.

The cheapest and most efficient way to get large quantities of munitions with the possibility of quick increases is for the Government to coöperate with private manufacturers. Let us take a specific example: If the Government wishes a battle cruiser built and asks for bids for one ship, it is obvious that the shipyard will have to charge all special appliances necessary for that type of vessel to the one job. If, however, the Navy can assure a shipbuilder of a continuance of the same kind of work, the manufacturer can distribute the cost of the special appliances. If such a plan is followed with many yards the possibility of increased production is very large. This is only one of a great many ways of coöperation which make for economy and efficiency. And this coöperation is entirely practical. The best proof of this is that it is practised with great success in England.

This does not mean that there should be no munition work done by the Army and Navy. There should be, but as there is no possibility of the Government's

having plants enough to do all the work in war time, it is the height of folly not to coöperate with private plants which are not chiefly munition plants so that they can tremendously augment our munition supplies when we need them.

On January 2, 1917, the Secretary of War presented to the Senate a report on the Government manufacture of arms, munitions, and equipment, made upon careful investigation by a board of Army officers.

Its conclusions were:

1. It is not desirable that the Government manufacture its arms, munitions, and equipment exclusively.

2. It is not feasible or practicable for it to do so with any due regard to economy or to preparedness within a reasonable time.

3. It is desirable that the Rock Island Arsenal be enlarged promptly and considerably, especially for the increased production of rifles.

4. It is desirable that modern machinery and appliances be installed in all arsenals where needed.

5. It is desirable to arrange with private industry for a portion of the supply of whatever reserves of arms, munitions, and equipment are determined upon with due regard to the conversion of their plant to use in such connection in time of war.

6. It is important to take into consideration the location as well as the organization of plants which are coördinated with a view both to safety and facilities for distribution.

7. It is important to accumulate at least a year's supply of all raw material which is needed in the manufacture of arms, munitions, and equipment and is not to be found within continental United States.

8. It is important to accumulate a full supply of drawings and gauges sufficient to enable all coördinated industries to work to full capacity promptly.

9. It is desirable to standardize gauges, jigs, and tools as far as practicable and as soon as practicable.

10. It is exceedingly important that skilled and experienced labor in coördin-

ated industries especially be enrolled and in the event of war, enlisted for work in selected factories.

11. It is important that a comprehensive plan of organization for prompt expansion to full capacity, night and day, both in Government plants and in those of coördinated private industries be worked out and made ready for immediate use.

12. It is important that the Government establish plants for the assemblage of field-gun ammunition at points as best adapted thereto, with due regard to safety and facility for distribution.

13. It is exceedingly important that our arsenals equipped for the manufacture of rifles and artillery be put to work at full capacity as early as possible.

The splendid response from manufacturers all over the country shows that there will be no lack of plants at the disposal of the Government. But these offers must be accepted and used with an accurate knowledge of manufacturing conditions and in a spirit of coöperation if we are to get the maximum benefit of their patriotism.

And there is one other important point. If we need any more munitions than we did two months ago, it is to fight Germany with. Most of the munitions that are being produced here now are being used for that purpose very effectively. If we interrupt the flow of finished munitions to Russia and Italy and the raw products to England and France in order to make munitions for ourselves, we shall be doing an immense service to Germany. Happily, this is not necessary. We have the raw materials and the manufacturing facilities to supply ourselves without diminishing our aid to the Allies. Under centralized Government control we could greatly increase our help to the Allies while providing adequately for ourselves.

Most of the finished products which we supply the Allies would not fit our military needs, and it would take almost as long to change over the plants from making Allies' munitions to making our own munitions as it would to change over other plants from peaceful pursuits to making munitions for us.

Every dictate of common sense and

efficiency, therefore, suggests that the Government coöperate with private effort in an intelligent manner so that our needs may be amply provided for and our help to the Allies increased.

THE LOYALTY OF GERMAN-AMERICANS

IMMEDIATELY after President Wilson announced the break in relations with Germany, Mr. Henry Morgenthau, ex-ambassador to Turkey, himself born in Austria, remarked: "I believe the German-Americans will be behind the President to a man. Indeed, they will lean over backward in their effort to prove their loyalty to the United States. The exceptions will be a few paid agents of the German Government."

At a meeting of representatives of 500 German and Austro-Hungarian societies held in New York City at the same time, the presiding officer, Mr. Ludwig Nissen, expressed their attitude in a simile which may prove to be the key to an understanding of this whole question of the German-American attitude: "Just as a man may love his mother and still owe first allegiance to his wife, so let us citizens of German origin sincerely follow this example by loving Germany and being loyal above all to the United States."

This conception of the German-American's position evidently had become widespread before the crisis, for on the same day, when Mr. Emil Von Schleinitz, of Milwaukee, and Dr. Leo Stern, president of the German Alliance of Wisconsin, were interviewed by newspapermen, each declared that "Germany is my mother but the United States is my bride."

The newspapers printed in German were also practically unanimous in expressing unreserved loyalty. Thus the St. Louis *Westliche Post* declared: "We are Americans and we know our duty. We must stand behind President Wilson. The nation must be solid." And the Cincinnati *Freie Press*: "There can be no question that the President's policy must and will have the support of all American citizens. Some people deeply regret the apparent tension between the United States and

Germany, but every true American citizen, no matter where he was born, knows what he owes his country at this crisis."

Perhaps as practical an evidence as has been given of the loyal intentions of the German-Americans was the offer of the Hoboken Independent Scheutzen Corps to teach the 1,500 boys in the Hoboken Schools Cadet Corps how to shoot—the older organization to pay all the expenses.

The New York *Staats-Zeitung*, founded by the late Hermann Ridder and now edited by his son, though always one of the most outstanding champions of Germany in this war, announced on the front page its unqualified assurances of loyalty to the United States in the event of war. And the New York *Herold* challenged native-born Americans, if war came, to enlist in equal proportion with the German-Americans or to carry the American flag as far into the "enemy's" trenches.

The dilemma of the spirit in which the German-Americans find themselves at such a crisis, and the fine resolution of the best of them, is reflected in the words of the German Omaha *Tribune*, when it says:

"The break with our old fatherland is at hand but our duty and our allegiance belong to America, first, last, and all the time. This duty we must perform and will perform above all considerations, regardless of what the future may have in store for us."

MEXICO AND THE WORLD WAR

SIMULTANEOUSLY with the break with Germany, the last of General Pershing's column crossed the Rio Grande from Mexico to the United States. The forces of Francisco Villa, whom General Pershing went into Mexico to catch, followed the retiring American forces. At the same time, the Carranza constitutional convention completed its task and set March 1st as the date of a general election.

The United States still holds firmly to its policy of leaving the problems in Mexico to the Mexicans for solution, always standing ready to give aid. But so far the Mexicans' suspicion of our motives and their peculiar sense of pride have

rendered our disposition to aid entirely futile. Carranza's Government, for example, felt humiliated that the American Red Cross should serve in Mexico, so he sent our Red Cross out of the country, though his humiliation did not lead him to organize any substitute for it. Other offers of aid from this side of the border have been similarly refused, the Mexican idea being that Mexico cannot with dignity accept such aid. The sending of Ambassador Fletcher, who is a trained diplomat and has had experience that will help him in Mexico, is a sign that we are improving in our methods of offering help.

Perhaps the constitutional convention might be taken as a sign that the Mexicans are progressing in their task, except that the Mexicans have always been more adept at the forms of constitutionalism than in its practice.

The newspapers reported that the constitution included among its provisions:

Abolition of the office of Vice-President; prohibition of the reelection of a President; stringent and radical labor laws, which provide for an eight-hour day, seven hours of night work and six working days a week; compulsory arbitration; profit-sharing; free employment bureaus; anti-trust laws; a national department of health with plenary powers; and compulsory military instruction.

Many clauses are based on the "Mexico for Mexicans" motto. All natural resources in Mexico are declared to be the property of the Government. All Mexicans are given preference in employment, land ownership, and concessions. Foreigners must renounce allegiance to their countries to acquire title to real estate. The land laws provide for cutting up large estates and returning communal and tribal lands.

The article regarding "separation" of church and state virtually means the taking over by the Government of the entire property in Mexico of the Roman Catholic Church, as religious orders are prohibited from owning or administering real estate, and all churches, as well as denominational, educational, and charitable institutions, pass into the hands of the Government. All clergymen must be of Mexican birth.

In all probability many of these provisions will not be over-vigorously observed, but in the present temper of the people it is certain that the provisions against the

development of Mexico by foreigners is seriously meant.

The fact that Carranza's Government still persists is a favorable sign for our trust in Mexican evolution, for while he has not been able to restore order his continued existence lends some color to the hope that he may.

On the other hand the continued activities of Villa and Zapata are unmistakable evidences that the reign of banditry is still in force, and the longer it lasts the less chance there is of Mexico's being able to solve her own problems. The reason this is true is that a country disintegrates under continued lawlessness, and the longer the lawlessness the greater the task of rehabilitation. For example, after a year or two of revolution there was still some semblance of currency in Mexico. Now it costs ten dollars or more of any of the many varieties of printed paper to ride on a street car, and the Carranza Government on various occasions has refused to accept fines and taxes in its own fiat currency, which it recognizes as practically worthless. The general condition of railroads, mines, buildings, and machinery also deteriorates, though not with the same rapidity that overcomes the fabric of credit. To ruin a country entirely takes much longer than is generally supposed, and there are still many parts of Mexico in fairly good condition. But it is none the less true that the longer the present situation exists the smaller our grounds for hope that Carranza will have the ability to resurrect the country alone, even if he can get rid of Villa and Zapata.

There is still another possible time limitation to Carranza's efforts. When the war ends there is almost certain to be very vigorous pressure from the European countries for a settlement for the damage done their citizens and subjects in Mexico. There is every reason to expect vigorous protest from England and France particularly, both because their losses have been heavy and because the German agents in Mexico have not only made trouble for us but for France and England as well.

The whole situation has become complicated to a point that would be ridiculous, were it not full of such serious possibilities.

One of Carranza's points of strength in Mexico is that he was at all times more vigorous in his notes to us than we were in our notes to him, that his conferees gave no concessions to us and that he finally talked our expeditionary force out of Mexico.

Villa, in the meanwhile, sends his soldiers to occupy Pershing's old quarters and claims credit for driving us out.

In other words, success against the United States is a major claim to popularity by all parties—which makes a difficult condition in which to offer disinterested services. And yet, while it is almost impossible to render service, there is imperative need for us to get Mexico on its feet and straightened out for Mexico's sake, to remove the menace to our border, and to limit our liability to our own citizens and those of other countries. For if we maintain the Monroe Doctrine, and at the same time a sense of justice and responsibility, we shall have to see that foreigners in Mexico are not killed and robbed without any accountability.

THE LITERACY TEST

CONGRESS, passing the so-called literacy test bill over the President's veto, brings to an end a long struggle to express in law one of the inmost convictions of the American people, the conviction that our democracy is imperiled by the flood of immigrants that has descended upon this country in the last twenty years. The idea of the "melting pot of the nations" was sound and right, but no melting pot will work when the cold metal thrown into it is sufficient to smother the molten mass already inside. The idea of an "asylum for the oppressed" was likewise sound, but our experiment with it was reaching proportions that threatened to make this country a political mad-house. For, after all, democracy is something more than a magic pill which can be handed to an immigrant at Ellis Island and which, when he has swallowed it, instantly fits him for participation in a government of free men. Formal allegiances to foreign princes are easily forsworn, but to cast

off the spiritual allegiances to old sentiments, old ideas, and old methods of political action is a matter of time. The new spirit must be slowly absorbed.

And no effort to induce this process of absorption was ever made. The Government undertook no responsibility for training the alien entering our gates, who must himself sooner or later shape our government. His contact with Americanism was left to the ministrations of the ward boss and the contract labor camp. Whether he should learn our language, understand our institutions, imbibe the American spirit—these things were left to chance, and chance is a desperate instrument in the hands of ignorance and poverty. Inevitably he learned profanity and slang instead of a forward-looking command of the language; inevitably he learned that his vote was worth five dollars before he learned that his vote was a sacred trust; inevitably his idea of the American spirit was "success at any price." Barred from many interests by the handicap of language, and learning the industrial and political power of concerted action, he and his fellows have tended to live and organize in racial groups for selfish advantage. They have thus become big, indigestible lumps in the national body, whereas wise prevision would have encouraged them to scatter widely throughout the country, where they would quickly yield to the greater pressure of Americanizing influences acting upon them as isolated individuals. Systematic training in our language and laws should have been established.

The enormous size of these alien lumps may be gathered from the table printed on the following page. And one of the most sensible plans for curtailing this menace is based upon the theory that new immigrants are likely to become citizens in the same proportions as the previous immigrants of the same origin. This plan, proceeding from this theory, would limit the yearly immigration of any people henceforth to a fixed percentage, say 5 per cent., of those from that people who have already become naturalized. The effect of this plan is shown in the following table:

He has been mayor of Tokio, has sat in the Imperial Parliament for many years, helped Okuma to found the progressive party, has been Minister of Education, and, in addition to these important posts, has for years wielded great popular influence as an orator. He has even gone so far at times, in his opposition to the existing régime, as to hint at the possibility of a Japanese Republic. Meanwhile, he has worked hard for a popular system of education after the American model, and for all the reforms that aim at improving the condition of the masses. Naturally his political ideals stand at the opposite extreme from those of Terauchi, the militant absolutist who represents the Prussian spirit in this Oriental empire.

The whole world is now talking of constitutionalism and liberty; the restoration of Poland has become one of the issues of the war; and never in history have privileges and caste government appeared so odious. Apparently this same spirit is stirring in Japan. The same question that was fought out in England under Charles I and in France under Louis XVI is now splitting this powerful nation of 55 million people into two parts. The world has never been so wearied as now of its Kaisers, its Kings, its Grand Dukes, and its "Sons of Heaven." We shall probably never have any real and lasting peace between nations until these remaining vestiges of a barren and superstitious past are removed. Certainly a Parliament in Japan responsible, not to a divine emperor, but to the Japanese people, would make for more cordial relations with the United States.

"JUSTICE TO ALL"

A BOOK has recently been published that answers all the questions which usually arise when one tries to imagine "the way out" after studying the ineffectiveness of city police and country constables. "Justice to All" by Katherine Mayo [G. P. Putnam's Sons], is the story of the Pennsylvania State Police, the so-called (incorrectly) Mounted Constabulary. It is narrative of fact as thrilling as a good detective story and as human as a good

novel. But it is, besides that, a sound exposition of the one sound method yet worked out in America of protecting rural communities from lawlessness and of preserving order during strikes without even the suspicion of unfairness to either laboring men or employers.

The State Police in ten years have practically freed the countryside in Pennsylvania of its three greatest perils—highway robbery, thievery, and rape—besides ending the reign of terror that formerly was always an accompaniment of a prolonged dispute between employers and their employees. In dealing with rural crime, the method is relentless pursuit backed by trained intelligence and long experience. No county boundaries limit the radius of search for a criminal. No local political influence paralyzes the sense of duty of men who are chosen by state authority and solely for their moral character, mental fitness, disciplinary training, and physical soundness. They have been equally beyond the reach of corporate corruption and labor intimidation—chiefly because they take no sides in industrial disputes; they are solely interested in preserving the peace and enforcing the laws, and they will do both as quickly against the armed guards of a big corporation as they will against a mob.

Miss Mayo's book should be read by every one who has any influence upon the political opinion of his neighborhood or a means of direct political action. It clearly points the way for states like New York, for example, or California, for another, in which a cosmopolitan population complicates the problem of effective police control in the rural districts. And in the South effective state police would stop the disgraceful yearly record of lynchings, both by preventing lynchings themselves and by preventing the various crimes which lead to lynchings.

Moreover, if the United States adopts universal service the National Guard as now constituted will cease to exist. The Federal army would not be available for local strikes and disturbances at the call of the state governors, and consequently the states would be almost forced to organize a constabulary which is not

only a much cheaper means of insuring order but an infinitely more effective one.

THIS NUMBER OF THE WORLD'S WORK

THE crisis in our relations with Germany caused the editors of the *WORLD'S WORK* to believe that a magazine of information about the condition of our military, naval, and industrial preparedness would be of more value to its readers than the usual variety of subjects. The magazine therefore contains summaries of our present condition and a dis-

cussion of the way in which we might best aid and imitate the democracies of Europe in the organization of finance, shipping, transportation, etc. Under the pressure of this more timely matter, the current instalment of "The Life of James J. Hill" has been temporarily omitted, as also the concluding chapter of Mr. Albert W. Atwood's article, "Paying Off the Mortgage on the United States." The substitution of the new matter for the old causes a slight delay in publication; but the editors trust this is more than compensated for by the interest and value of the new matter.

OUR NAVY AND ARMY IN WAR

TASKS THAT WILL FACE IT—OUR MAIN DUTIES WILL BE ON THE WATER—PATROLLING COASTS AND HUNTING SUBMARINES—CHANCES OF A LARGE ARMY BEING SENT TO EUROPE

AT THE prospect of hostilities with Germany the American Navy finds itself in much the same situation as the British fleet at the beginning of the European War. The British Fleet had just finished a naval review and had mobilized its fighting ships. Likewise the breaking off of relations with Germany found the American battle fleet precisely where, according to all prearranged war plans, it would station itself in case of hostilities with a first class power—in the Caribbean Sea. But the difference is, of course, that our main fleet is in no danger of having a major adversary in its territory.

A modern fighting fleet is measured by capital ships, a term including the dreadnaught type and the battle cruiser. We now have afloat 12 of these ships, five are under construction and eight have been appropriated for, of which the contracts for four have been let. This gives us in actual service and under way a fleet that numbers twenty-five. England entered the war with twenty-nine capital ships afloat and 17 building, a total of 46; Germany had seventeen in commission and eleven under way, or twenty-eight. Of the other nations France had three capital

ships and nine building, Japan four and six building, Italy three afloat and seven building, Austria-Hungary three and five building. Russia did not possess a single capital ship when the war started, although she had eleven under construction. Just what all these belligerent navies have accomplished since 1914 is not known. That England has enormously increased her dreadnaught fleet is not disputed; all kinds of stories as to her gigantic preponderance have reached the United States. Germany, it is generally believed, has added substantially to hers, though it is more likely that she has used her energies for building submarines rather than big fighting ships. Probably France, Russia, Italy, and Austria have not increased their dreadnaughts to a large extent, something which, in view of England's great shipbuilding programme, was hardly necessary; their chief energies in this war are on the military rather than the naval side. Stories are plentiful that Japan has been rapidly increasing her fighting forces at sea—stories, too, that are generally believed, although no precise details are forthcoming.

The statement that Uncle Sam has twenty-five dreadnaughts built, building,

or authorized includes in the calculation the four dreadnaughts and four battle cruisers included in the great naval programme adopted last fall. But the contracts for these four battle cruisers have not yet been let.

The bids for the new battleships call for completion in from thirty to thirty-nine months, while the private builders who have bid on battle cruisers cannot guarantee delivery in less than forty-six months. It is quite evident, therefore, that, unless some means are found of speeding up this new programme, our new ships will not play a conspicuous part in this war. It is not likely that we shall have more than seventeen big ships in commission before the conclusion of the present war.

The latest navy year book gives our Navy seventeen battleships of the first line—really a formidable fighting force. But this list includes the *Tennessee* and the *California*, whose keels have not yet been laid, but upon which a considerable amount of preliminary work has been done, and the *Idaho*, *Mississippi*, and *New Mexico*, which are not yet completed, though well advanced. The exact condition of work on these is as follows:

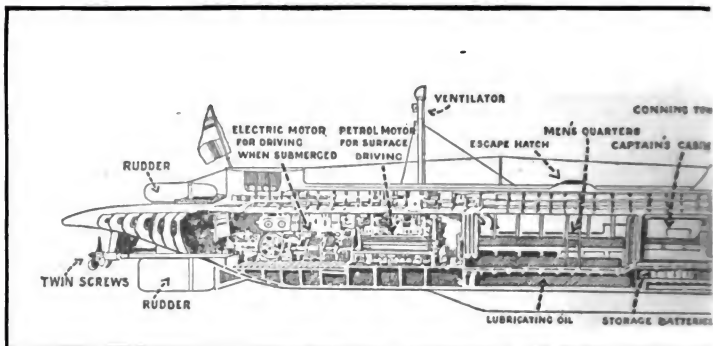
NAME	PER CENT. COMPLETED NOV. 1, 1916
New Mexico	 52 per cent.
Mississippi	 59 per cent.
Idaho	 65 per cent.
Tennessee	 1.4 per cent.
California	 6.1 per cent.

This table seems to indicate that, in a few months, probably before the end of summer, we shall have fifteen dreadnaughts in our first battle line. What purpose will these serve in a war against Germany?

Under present conditions, they can be regarded only as a source of potential strength. We shall probably do with our dreadnaught fleet precisely what all other navies have done, locate them in secluded spots, behind a screen of nets, booms, destroyers, and light cruisers. Any naval operations in which we may engage will probably take the form of convoying cargo ships, protecting our harbors from submarine attacks, and hunting German submarines. Dreadnaughts have little usefulness

in work of this kind. For submarine warfare we need destroyers, light cruisers, and perhaps a large assortment of what are known as mosquito craft—small, fast, converted yachts, motor boats, and the like, carrying three-inch guns. But, if we lock our dreadnaught fleet up in harbors, we shall have to use a considerable part of our destroyers to form a protecting screen. It is usually estimated that three or four destroyers are needed to protect each battleship—for fifteen this would evidently demand forty-five or sixty. The latest list discloses that we have only fifty-eight destroyers, built and building.

Clearly, we shall not use our dreadnaught fleet for submarine hunting and convoying cargo ships. Yet these are evidently the activities that will engross our attention in any naval war with Germany. Germany has now only one naval aspiration—to destroy all shipping with submarines and so reduce England by starvation. That she has submarines large enough to cross the Atlantic and operate in our waters we know from experience. Indeed, perhaps the real reason for sending the *Deutschland* and the *U-53* was to impress upon the American mind the vulnerability of our coastline. The most extensive submarine activities will probably take place off Ireland and in adjacent waters, yet the larger sea-going craft will probably make their appearance on this side of the Atlantic. Our whole coast will live momentarily expecting the appearance of these large German underwater boats. It is not inconceivable that they will not only hunt for merchant ships, but even shell our cities. In the main we have four large areas to protect, the Chesapeake, the Delaware, New York, and Boston, for the naval strategists think there is little chance of depredations south of the Virginia coast. For this work we should probably use such destroyers as we could safely withdraw from the large fleet, such mosquito craft and light cruisers as we possess and possibly the reserve battleships, though it is problematical whether the latter type could render useful service, as the danger of their own destruction would be considerable. The Navy



A CROSS SECTION VIEW OF
Showing how the interior of a submarine is

list shows that we possess the following ships of this lighter type:

Cruisers, first class	5
Cruisers, second class	4
Cruisers, third class	16
Coast torpedo vessels	16
Torpedo boats	17
Gunboats	29
Converted yachts	14
Tugs	49
Total	150

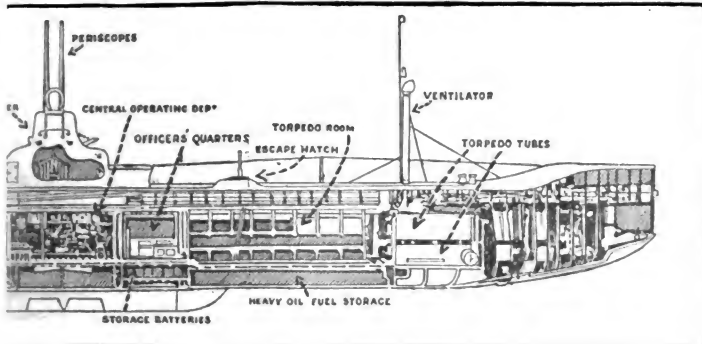
These are the ships—doubtless many of them are not particularly serviceable—that we should have to use for anti-submarine warfare. Their business would be to patrol the coast, always going at their highest speed—as this speed is the best protection they have against submarines—and attack the underwater craft wherever they may show themselves. England has found these light craft their best means of disposing of this hidden enemy. All, even the smallest, carry guns of three inch calibre and more, from which a single, well-planted shot suffices to send the enemy to the bottom. Submarines, of all fighting craft, are the most vulnerable, and, although we hear many stories that Germany has built submarines with armor thick enough to resist the smaller shells, the chances are that most will succumb to attack from small surface boats. Sub-

marine hunting is a risky sport, as a torpedo or gunfire not infrequently gets the hunter but, on the whole, it is an efficacious way of meeting the under-water peril. Also, the United States has many vessels privately owned, steam yachts and the like, which, by installing guns, can be converted into fair submarine hunters.

HUNTING SUBMARINES

That German submarines can operate in American waters is one fact that we well understand in advance. In the last eight months two strange visitors from the Fatherland have paid us more or less unwelcome visits. The vessel that has the greatest practical interest for Americans now is the U-53, which arrived suddenly off Newport, R. I. last October, stayed for an hour or two and, sailing out to sea, came to the surface off Nantucket and sank five merchant ships. Supposing the U-53 had directed its hostilities against the United States, what would have been its mode of operation and just how much injury could it have done us?

In estimating the offensive qualities of this destructive problem, we must revise considerably our prepossessions about submarines. The mere fact that the U-53 crossed the Atlantic and presumably returned without taking on new supplies shows that she was a submarine the like



A TYPICAL GERMAN SUBMARINE

divided up and every inch of valuable space utilized

of which had been unknown before the war. It is true that she represented essentially no new ideas in under-water boats; the only interesting thing was that she had realized these qualities in an extreme degree. Though it is not at all unlikely that there are now plenty of submarines as large, or even larger, than the *U-53*, in both the German and the English navies, this visitor represented a leviathan among under-water craft. She was launched in January, 1916, and is 213 feet long—a length which, a generation ago, was a respectable size for an ocean-going steamship. She displaces 800 tons, makes a surface speed of eighteen knots, and can do somewhat better than ten knots under the water. On the surface, that is, she is swifter than most tramp steamers and is nearly as fast as the American battleships that fought at Santiago. Like all submarines, an electric engine furnishes the motive power when she is submerged and an oil engine drives her upon the surface, her Diesel engine generating 2,400 horsepower. The *U-53* carries ten torpedoes, though, if she had to use these at any great distance and fire from periscope observations, these weapons would probably not destroy more than two or three ships at the most. But when attacking unarmed merchant vessels the submarine can come to the surface and get a truer aim, in which

event the *U-53* would probably make every torpedo count. Besides these arms, this vessel carries two guns, which, as recent reports show, are useful for shelling defenseless vessels. There are many other striking details about the *U-53*, but the two facts that chiefly interest us at the present moment are that she has a cruising radius of 10,000 miles and can travel seventy miles under water without coming to the surface. That this latter achievement should be hailed as something remarkable emphasizes, as will be explained subsequently, one of the greatest limitations of this type of vessel. That she can sail 10,000 miles means that vessels of this size can cross the Atlantic, make warfare on ships in American waters, and return to Germany—all without taking on new supplies. We have heard much recently of submarine bases which Germany may have surreptitiously established on this side of the Atlantic. That such bases would make easier assaults upon our coast line is evident, but they are not indispensable to such enterprises.

The *U-53*, in a brief space of time, sank four English, one Norwegian, and one Dutch merchant vessels. Had these been American ships, they would have offered just as handy targets. Moreover, the *U-53* came into Newport practically without notice. This harbor is a naval

station, and, at the very moment the *U-53* entered, it was filled with American warships. The submarine could readily have discharged a fair percentage of her torpedoes against these vessels. She might have pursued her way up Long Island Sound, sailed into Bridgeport, and landed a few shells in the works of the Remington Arms Company. Or she might have gone still further up to the Brooklyn Navy Yard, destroyed several large battleships there, and shelled the dreadnaught *California*, now under construction at that station. The *U-53* could not have done all these things, because her supply of torpedoes would not have sufficed; it is plain enough, however, that, in our unprotected condition last October, which continues virtually up to the present writing, she could have inflicted terrific damage.

But now let us change the picture. Suppose that the United States Navy had mapped out a complete plan for fighting submarines and was ready for this presumptuous German emissary. What then would have happened? Perhaps in time our naval experts, who are by no means unskilful, will work out more successful schemes for submarine-hunting than the English, but what we can learn from this latter source will do excellent service. In that case our Navy would have plotted the most vulnerable points on the Atlantic seaboard—say the waters about the entrance to Chesapeake Bay, those about Delaware Bay, those about New York, which would include the waters outside Sandy Hook as well as those about the eastern entrance to the Sound—which the *U-53* entered—and those about Boston. Each of these areas command our greatest ports—the Chesapeake; Baltimore, Washington, Richmond; the Delaware; Philadelphia, and Wilmington; the others; New York, Boston, and all the places reached by Long Island Sound. These are the Atlantic areas which, in the opinion of naval men, are most likely to be attacked by submarines. They fear not so much for Charleston, Galveston, and New Orleans, though probably, because local sentiment would no doubt insist, these waters would be specially guarded also. Each one of these areas would be divided into sectors.

A naval officer, with a patrol of small ships—destroyers, light cruisers, torpedo boats, gunboats, converted yachts, even motor boats—would constantly sail over his sector. He would be, like a policeman, responsible for a few square miles as his "beat." His business would be to watch for submarines, and to destroy them whenever they appeared. How would he be able to discover the enemy? It is somewhat simpler than most people suppose.

First of all, we must free our minds of one prevailing idea. The most spectacular characteristic of a submarine is that it sails under the water, and this fact has persuaded most of us that it is exclusively an under-water craft. Our imaginations have been filled with pictures of this stealthy foe, lurking always unseen beneath the waves, delivering its dart and escaping without once revealing its whereabouts. Now this picture is not strictly accurate. According to Captain Sims, of the United States Navy—the information is taken from his testimony before the House Naval Committee—a submarine always reveals her presence to the seeing eye. If near the surface, her periscope leaves the betraying wake, and, even when she is a hundred feet or more under water, she always disturbs the surface in a way that, to the experienced observer, makes her presence known. The watcher in an airplane quickly sees such disturbances, even if the submersible is too far under the sea to be seen itself.

But the important fact is that the submarine spends most of her time on the surface. The *U-53*'s ability to sail seventy miles under water without rising is regarded as a great achievement. Most submarines, that is, cannot keep submerged nearly so long. The reason is that it has to come to the surface to recharge its electric batteries. This recharging is done by the oil engines, which can work only on the surface, because of the exhaust. In addition to its other disadvantages, this recharging process makes a noise that can be heard five miles away, which means that the submarine blatantly advertises its presence. While undergoing this ordeal, the submarine is in a helpless condition, and a well aimed shot, even from :

small gun, such as a motor boat can carry, can pierce its thin steel plates and send it to the bottom. If the North Sea could yield up the tragedies of this kind that have marked the present war, the submarine would lose some of its terrors—for those fearing its attacks.

If we had been in a state of war with Germany last fall and prepared for submarine attacks, the *U-53* could never have got into Newport Harbor. That harbor would have been protected by booms and nets which would have shut out submarines. The eastern end of Long Island Sound would have been swarming with many different kinds of patrol boats, while airplanes and seaplanes would have constantly been searching the seas from above. The scene would have been an exceedingly animated one—and one not at all inviting even to a *U-53*. In this way the English have patrolled the Channel and kept the way open for transporting millions of troops and untold quantities of supplies to Northern France. The scheme works so well that German submarines do not enter these waters. Had we established such a system, a repetition of the *U-53*'s activities off Nantucket would not be as easy as it would be under present conditions. Assume an attack under such conditions. The watchful aviator on the outlook, or a light cruiser, sees a familiar disturbance on the surface, or even the wake of the periscope. Perhaps the submarine, having exhausted its storage battery, rises to the

surface. The likelihood, in the latter case, is that some one of the swarming craft would see it and immediately let go a three-inch shell. That would end that particular submarine. But it might succeed in submerging before the gun could be pointed or a boat get near enough to ram. Even in that case its doom would probably be sealed, for a submarine that once betrays its presence is usually caught.

The observing vessel immediately wire-
lesses to all its fellow searchers that a submarine is thereabouts. Now everybody knows one thing about this submarine. If it is the *U-53*, everyone knows that it cannot sail more than seventy miles under the water without coming to the surface. Take the spot where the submarine went down as the centre and draw about it a circle with a radius of seventy miles. Clearly, the *U-53*, when it rises to the surface, must rise somewhere within this circle. And, since the expectant patrol knows the speed of the quarry, it can tell almost precisely where it will be at a particular time. Since it goes at a speed of, say, ten miles an hour, in one hour the submarine will be somewhere in a circle ten miles away from the centre, in two hours twenty miles, and so on. Now all these facts are sent by wireless to the patrolling fleet. All vessels ten miles away form in a line and sweep across this circle; those twenty miles way form another line and sweep across the other circle, and so on. Within a few hours one



RELATIVE DIMENSIONS OF GERMANY'S "U-1" AND "U-53"

U-1

Built 1906
Length 139 feet
Displacement 240 tons
Speed (surface) 11 knots
Speed (submerged) 9 knots
Torpedoes 3-18 inch
Torpedo Tubes 1 forward
Cruising Radius 700 miles
Periscopes 1
Guns on deck 0

U-53

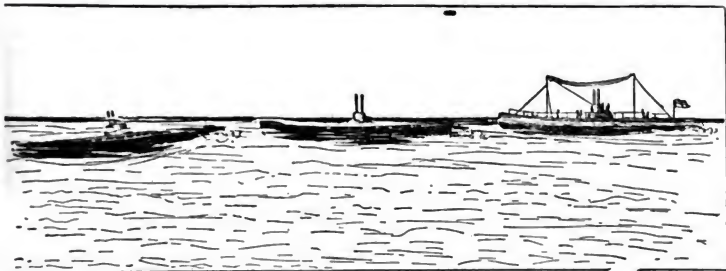
Built 1916
Length 213 feet, 3 inches
Displacement 800 tons
Speed (surface) 18 knots
Speed (submerged) 10 knots
Torpedoes 10
Torpedo Tubes 2 forward—2 aft
Cruising Radius 10,000 miles
Periscopes 3
Guns on deck 2

of the cordons usually picks up the enemy. If it comes to the surface, a shot ends its career, but the periscope wake or the surface disturbance serves the purpose quite as well. Now two destroyers arrive, and, entirely "unbeknownst" to the poor submarine, station themselves, one on each side, some distance ahead of the wake. They throw out a net ahead of the wake—a net of ingenious workmanship. It is made of wire rope, about as thick as a lead pencil, and the meshes are of great size—about ten or fifteen feet square. The net has floats on top that keep bobbing up and down like the float on a fish line and on the bottom are weights that keep the whole thing in a perpendicular position. The submarine cannot submerge to very great depths on account of the pressure—200 feet being about the limiting depth. It sails innocently along therefore, until it pushes its nose into these meshes. Most people can visualize what happens now. The net trails along on both sides of the submarine—its progress revealing the fact that something below is supplying the motive power. Perhaps the net suddenly stops; that means that the hidden submarine has stopped, its navigators having made the horrible discovery that they are trapped—or perhaps the net has become twisted in the propeller. Under these conditions the wise submarine rises to the surface. It surrenders, becomes the property of the enemy, and its crew are made prisoners. If it does not take such action one of two things will happen. The enemy will wait upon the surface until the submersible comes up or, if it starts moving, the enemy will follow until the inevitable uprising. But perhaps the surface commander gets impatient; in such a case he can let a bomb down into the water, which will explode when it touches the roof of the submarine. Of course, the submerged Germans know that this bomb is likely to drop at any minute; the "psychology" of such a situation tends to persuade the imprisoned crew to surrender.

This is the way we could have handled the *U-53*. Unfortunately the German situation found us without booms, or nets, or a sufficient force of destroyers and light cruisers. The moral is plain. We should

rush these features of our preparations before any others. There is little question that a large patrol of small vessels, at the places described, would protect us from the only warfare Germany can now send against us. Possibly she has types of submarines against which this method of defense will be useless, but it is not likely.

But our greatest need, in case of hostilities, is in preparation. We shall have to do an enormous amount of work on the Navy and spend large amounts of money, in order to put it in fighting trim. Fortunately we shall have the opportunity of doing this, for there is little likelihood that we shall engage in naval hostilities on a large scale. Our navy chiefs understand perfectly what we need and have made all their plans for eventualities; the political branch is the only thing that has stood in the way of an efficient Navy. The Navy Department has lost much valuable time in the last two years and the outbreak of the German difficulty found the Secretary engaged in a characteristic squabble with our largest munition manufacturers. The first step in preparedness should be the establishment of more cordial relations between the munition makers and the Administration. Uncle Sam should abandon at once all his wild goose schemes for armor plants and projectile factories and get to work with the manufacturers who are ready to begin work immediately. Practically all these concerns are willing to cooperate with the Government, and it is only the cheapest demagogism which detects in this willingness a desire to make huge profits. The Government can commandeer any plants, but the effective way to use them is under their own management, directed by the Council of National Defense and its Advisory Commission. Practically all the munition makers in the United States are willing now to undertake work upon this basis. Even before the crisis, in the hearings before the House Naval Committee, the responsible head of the Bethlehem Steel Company has offered to build warships for the United States, on the agreement that the Federal Government, after an examination of all their books, shall fix the price. This represents the attitude of



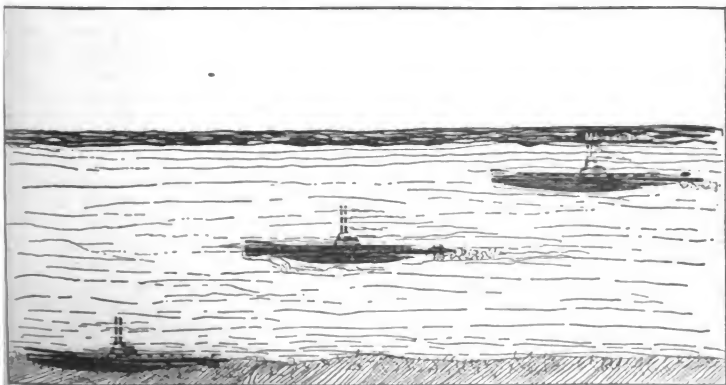
THE INITIAL STEPS IN A SUBMARINE'S DIVE

On the right, the submarine is running along the surface; in the centre, the ballast tanks have been flooded and the submarine is awash; on the left, the horizontal rudders are turned, the motors set working, and the submarine glides under the surface

practically all our armament makers and certainly offers a fair basis for getting together. Unfortunately, Mr. Daniels has ignored these offers, being obsessed with the idea of government manufacture, an idea that cannot be immediately effective on a large scale for plants cannot be erected and placed upon a working basis in two or three years; clearly, therefore, we shall have to depend upon our private makers. And the resources of our private makers are large and can be extended almost without limit.

Pressure is being exercised upon the

Government to speed up the building programme adopted in the bill of 1916. This stipulates that work should be started immediately upon four battleships, four battle cruisers, four scout cruisers, twenty destroyers, three submarines of 800 tons displacement, twenty-seven submarines of about 500 tons, one experimental submarine, one fuel ship, one hospital ship, one ammunition ship, and one gunboat. The Department has already let contracts for all these vessels except the four battle cruisers and three scout cruisers. These units, as well as the others provided in the



RUNNING SUBMERGED

On the right, the submarine is steered by the periscopes and kept at the correct depth by the horizontal rudders; in the centre, the boat is completely submerged and steers by compass and clock; and on the left, by letting more water into the ballast tank the boat rests lightly on the bottom

1916 bill, are intended to form part of a modern symmetrical navy. It is doubtful whether the present exigency, so far as rush construction is concerned, would be met best by hurrying work on this programme. The Allies already have battle fleets large enough to "contain" the German squadrons. The war, as already said, has settled down to submarine operations. Our work, so far as we have any to do, should be concentrated upon meeting this menace. Clearly, therefore, our shipyards should be devoted to turning out, in large quantities, the type of vessel most useful for fighting submarines. We should not neglect work on larger units of the fleet, for there are other national dangers facing us than those that come from Germany, but the Department should certainly devote much attention to turning out destroyers, light and swift cruisers, and other vessels of special type which have demonstrated great usefulness in meeting precisely the present situation. The greatest lack in the American Navy, at the present moment, is destroyers and this lack we should immediately set about to remedy, even at the cost of delaying other work.

Clearly, such fighting as America may do will be upon the sea. This does not mean, however, that we should ignore the possibility of land warfare. Indeed, the War College has all its plans matured for precisely the contingency we are now facing, and, in case war is declared, the Army will be transformed on to a war basis according to these plans. The Army will have three separate tasks in mind. The first, and probably the least important, will be to hold itself in readiness to crush, at the first indication, any local disorders; the police and militia will mainly guard against any dangers of this sort, but there is a chance, though a remote one, that regular troops will be required. Perhaps the most important work will be the formation of a large force, with the regular Army as its nucleus, to form a defense against possible invasion. Here, again, the likelihood of any such use for the Army is remote. But, as a matter of general policy, the War Department will entertain the possibility that the British fleet may break down and our own give way, calamities

that would make our coast subject to invasion. Our War College, of course, has the most complete plans formed to meet any such dangers. The third use of the Army would be as a force that might be transported for field work in France. This might take the form of an expeditionary force of 50,000 or 100,000 men, such as England put in France in the early days of the war, an action we should take, if we took it at all, merely for its moral value. Again, we might send a substantial force, one or two million strong, or even stronger, for real work in pushing back the German line.

All this discussion, to those familiar with our standing forces, sounds rather academic. Yet it is not necessarily so. At the earliest, we could not get an Army of a million men ready within a year, but it is not impossible that we should have a year, or even a longer time, in which to do it. Nor would such a force be necessarily unwelcome to the Allies, for, in a year or two from now, assuming that the war lasts that long, their forces might be so depleted that a large army from this side would prove highly useful. There is not the slightest question that, given time, we could raise and equip a larger army than any of the competing nations, excepting, perhaps, Russia. The census shows that there are 20,000,000 men in the United States of military age, from 18 to 45. If we take the military age as from 18 to 32, we have nearly 10,000,000 and if from 18 to 23, nearly 5,000,000. Moreover, about 1,000,000 young men reach military age here every year. Thus, if we went into the business of raising armies, we should not lack men; nor, in view of our huge manufacturing plants, should we lack equipment. At present, public sentiment would probably not support sending a large conscript army to France, but, if German ruthlessness is manifested in all its logical extremes, it is not impossible that it may. Most intelligent public sentiment agrees upon one point, and that is that we should adopt at once universal military service. We should not repeat the blunders England has made in this war—which are nearly the same blunders we made in the Civil War.

HOW WE CAN BEST HELP THE ALLIES

FINANCIAL COÖPERATION AND AID—COMBATING THE SUBMARINE—MILITARY PREPAREDNESS—CONTROL AND REGULATION OF SHIPPING AND RAILROADS—ORGANIZATION OF PRODUCTION OF WAR MATERIALS—DANGER OF HARMING RATHER THAN HELPING THE ALLIES—LABOR—MAXIMUM FOOD PRICES—THE ECONOMIC ADVANTAGES TO THE UNITED STATES

IF WE are to have war with Germany the obvious way for us to conduct it is the way which will most quickly and effectively gain our object, whether that object be the ending of the Prussian military idea or merely the ending of the particular symptom of that idea which chiefly affects us—the U-boat warfare.

The quickest and most effective way for us to fight Germany is to do certain definite things to make the Allies' war on Germany more effective.

First and foremost is our financial cooperation with England and France. In the two and a half years of the war the United States has changed from a debtor to a creditor nation. Where formerly out of every dollar made in this country a little interest had to be sent to Europe to pay for the money Europe had lent us, now we have not only paid back the debt but we in our turn receive interest from Europe. When the war began, as a nation we probably owed Europe 4 or 5 billion dollars, or \$400 to \$500 a head for each person in the country. Five per cent. on 5 billion dollars is 250 million dollars a year. Something like that is what we have been paying to Europe every year in interest. During the war we have paid off most of our billion debt and have lent the Allies 4 or 5 billion. It is this money which they have spent here and which accounts for our phenomenal prosperity.

This foreign trade prosperity is almost universal in this country, notwithstanding the general idea that it consists chiefly of steel and iron products—munitions. Between 1913 and 1916, the exports of wheat, flour, oats, meat, and dairy products increased more than did the exports of iron and steel products. But curiously enough, although this prosperity is all over

the country, it is chiefly financed through one firm—J. P. Morgan & Company.

The national banking system under the Federal Reserve Board has held aloof from any participation in the lending of money or credit to the Allies for them to spend here to increase our prosperity. Our foreign markets, therefore, have been limited to the gold the Allies could send us and the Allied securities which Morgan & Company could sell. But if we wished to do all in our power to insure Germany's defeat, the United States Government could put the stamp of its approval on the credit of England and France and they would be assured of plenty of credit here with which to purchase everything that they can want from us. As far as our prosperity is dependent upon foreign purchases, it would be increased rather than diminished by our helping the Allies.

To put our financial resources behind those of the Allies for the conduct of the war would immediately relieve them of their worst financial problem—that of keeping a proper gold supply at home.

The second definite thing which we can do is to take over the work of the Allied navies on this side of the water. Great Britain and France have had to keep in the Western Atlantic a large number of lesser war vessels to combat raiders, to search for submarines, to see that the interned German merchant ships do not escape, and to keep up a general patrol. This has been no simple task, for many are the breaches of neutrality that the Germans have attempted both here in the United States and to the south of the United States. This piece of work can be taken over by our Navy. Also, if the German submarines succeed in making raids on this side of the ocean, our Navy can undertake to convoy our

merchant ships until they reach the area which the Allies will patrol on their side of the Atlantic. This one move—the use of our Navy for patrol work—will be of infinite use to the Allies, for it will free all their lighter war vessels which are now in Western waters to prosecute the anti-submarine war more vigorously around England and in the Mediterranean. The Allies now need no further ships to augment their grand fleet, but the increase in size and cruising range of submarines has enlarged the area necessary for patrol work, and these light cruisers may be taken away from here and used in European waters to great advantage.

Not that the Allies fear the ability of the Germans to get any decisive result by their renewal of ruthless submarine warfare. The Germans have tried their utmost, despite their protestations in their answer to our *Sussex* note, to torpedo the two largest ships still in the merchant service between New York and England, the *Baltic* and the *Adriatic*, and for a year they failed. The chances of their getting such boats under the new conditions are not much greater than they have been before. As an English captain said: "Seventy-five per cent. of this great threat is pure bluff, and the other twenty-five per cent. will rapidly diminish into futility." And that is probably true. For once all merchantmen are allowed to arm themselves the submarine war becomes much less effective. So far, the chief obstacle to the arming of merchant vessels has been the attitude of the United States: that ships armed in any way except defensively would be considered vessels of war and could not trade with our ports. With this restriction removed the defense against submarines will be much easier.

SUBMARINE DEFENSE

The German submarine now has little or no love for the armed tramp or steamer. It is not as simple as is generally supposed to sink a ship without rising to the surface. A submarine can carry only a limited number of torpedoes, whereas it can carry enough ammunition to sink many ships. Before now the Germans felt fairly sure when they met a ship from the United

States that it was unarmed or only armed with guns on the stern. Under these conditions the submarine had a more equal chance of sinking the ship if it resisted. To torpedo a ship a submarine must come fairly close and must show its periscope, which at a short distance is plainly visible and is not an impossible target.

There is no question but that along the Atlantic seaboard the Germans could establish submarine stations. There are thousands of small inlets and islands almost inaccessible which would make excellent points of refuge for the U-boats. One of the first moves that the United States should do is to establish a complete force—perhaps civilian-volunteer—to patrol from the Rio Grande to Maine to seek out any such places and destroy them. We have more than a thousand motor boats already enrolled in our naval reserve and the makers of such speed launches could be organized to turn their output to increasing this fleet to aid in this work. To stop absolutely the submarine warfare is the first and main piece of work for our naval and military authorities to take up. And the work of the fleet will be to a large extent nullified if we do not see to it that no submarine can use some spots in the Western Hemisphere as bases.

The United States, therefore, can very materially aid the Allies by eliminating submarine bases, by taking over the patrol on this side of the Atlantic. It has already taken off the restriction against armed ships entering our ports. In these three ways the United States can help minimize the loss of tonnage by submarine war.

THE SHIPPING PROBLEM

We can also in two ways add greatly to the world's tonnage. In the first place we can take over, repair, and commission the great German merchant fleet which now lies in American harbors. There are ninety-one of these ships with a gross tonnage of 594,696 tons. This is more than a quarter of all the Allied and neutral tonnage destroyed in 1916—which amounts to just more than two million tons. It is difficult to tell how quickly these German ships could be gotten into service because not only have they deteriorated from lack

ENTENTE ALLIES

	CONSTRUCTION 1916		DESTRUCTION 1916		LOSS OR GAIN 1916	
	SHIPS	TONNAGE	SHIPS	TONNAGE	SHIPS	TONNAGE
Great Britain.....	510	720,368	476	1,135,578	+ 34	—415,210
France.....	10	39,457	76	119,336	— 66	—79,879
Italy.....	30	60,472	89	151,482	— 59	—91,010
Russia.....	0	0	25	29,709	— 25	—29,709
Portugal.....	0	0	7	9,077	— 7	— 9,077
Totals.....	550	820,297	673	1,445,182	—123	—624,885

NEUTRALS

	CONSTRUCTION 1916		DESTRUCTION 1916		LOSS OR GAIN 1916	
	SHIPS	TONNAGE	SHIPS	TONNAGE	SHIPS	TONNAGE
Holland.....	297	208,180	33	79,184	+264	+128,996
Norway.....	70	44,903	199	262,739	—129	—217,836
Sweden.....	35	40,090	20	39,273	+ 15	+ 817
Denmark.....	30	37,150	52	49,312	— 22	—12,162
Spain.....	4	10,071	20	39,273	— 16	—20,202
Greece.....	0	0	36	70,090	— 36	—70,090
Totals.....	436	340,394	360	539,871	+ 76	—199,477
United States.....	1213	560,239	4	14,181	+1209	+546,058
Grand Totals.....	2199	1,720,930	1037	1,999,234	+1162	—278,304

CONSTRUCTION AND DESTRUCTION OF MERCHANT SHIPPING IN 1916

The table shows the total number of ships and their tonnage constructed in the Allied and neutral countries during 1916, and the number destroyed during the same period. Of the British ships, 176 were either trawlers or fishing smacks of less than 600 tons. On the other hand, one half of the American ships built, comprising about one fifth of the tonnage, is of such a nature that it is unavailable for merchant service. Fifty of the ships totalling about 40,000 tons built in America were for foreign customers.

During 1916, the net reduction of the neutral and Allied tonnage was 278,304 tons, whereas the number of ships increased 1162. The total Allied and neutral tonnage last year amounted to about 42,000,000 tons. In 1916 the Germans lessened it by less than two thirds of one per cent. England's loss in tonnage over and above the amount built in 1916 was 415,210 tons. Against this loss can be credited 700,000 tons of enemy shipping seized on German ships chartered from Portugal, which makes a clear gain in tonnage

for Great Britain. In 1915, the U-Boat warfare did not destroy as much British tonnage as was built in the British Empire.

The United States has under construction, to be commissioned in 1917, 357 ships totalling 1,250,722 tons. Unquestionably the Allied nations are increasing their output. To this we can add the 91 German ships interned in the United States, nearly 600,000 tons. To overcome this enormous increase in shipping, the Germans must multiply their submarine destructiveness by many times their previous efforts.

It is not a question of how many ships the Germans sink but what kind of ships and in what business these ships are employed; the sinking of trawlers and hospital ships does not directly hurt the Allied food supply.

It is a race between the submarine blockade and starvation in Germany, with the odds against the submarine

of care but they have been to some extent purposely damaged by the German crews.

Certain orders had been given to the commanders of interned German ships to do some definite act on January 31st. Just what move was contemplated is not known, for the Government got wind of it and closed the ports and inspected all the ships. In Charleston, S. C., harbor, however, one zealous German captain sank his ship, and in New York harbor the Germans threw overboard much machinery and destroyed many papers and did other damage.

But whatever the damage turns out to be it can certainly be fairly rapidly made

good. These ships would take the place of three or four months' losses at the rate at which the submarine war was conducted last year, or one to two months' losses if the German U-boat warfare averages double its former toll.

In the meanwhile the ship production of the United States is the greatest in the history of the country and the majority of the building is for the ocean and not the lake trade.

During the past year American shipyards have turned out 560,239 tons of shipping. With only the same amount of building during the next year and with the addition of the interned German fleet

we should add to the world's tonnage at least 50 per cent. of what the Germans sank last year. This not only would help the Allies but it would also help us, for the more ships there are on the ocean the more of our products can go abroad.

But there is little doubt that we can do better in building than we did last year, for the demand has increased our shipyard facilities. There are 1,250,000 tons contracted for to be finished during the next year. There is, moreover, a lesson to be learned from the British experience which would help us materially. For the first two years of the war we watched and often criticized the British efforts at organization and central control. We have had ample opportunity to see what their slowness fully to face their problems cost them and if the lesson were of value to us we would put under Government direction not only the building of warships but the building of merchant ships as well and make subject to regulation not only the routes and times of the sailing of American vessels but the character of the cargo. It was by such regulation as this that Great Britain has solved the problem of congestion in her ports and made each ton of shipping do its full quota of essential work. Presumably the recently appointed Federal Shipping Board would take over the direction and encouragement of merchant shipbuilding and the direction of shipping so as to prevent port congestion—though all experience would prove that a single able man would do much better than a board of several members.

But whether under a board or a single executive our shipping should be armed to combat the submarines, should sail entirely under the orders of the Navy Department, and the comings and goings of all ships should be subject to naval contingencies and orders. Moreover, every ship's cargo must be utilized so as to give the maximum aid. Private business and shipments should come second to war needs of the United States and the Allied countries. The control of the shipments should be absolute, so that, in coöperation with the Allies, the Government can see that it is done. We could also be of great aid, by taking over from the British and

French all the censorship of shipments which they now do at an immense loss of time and money. Each cargo going from the United States should be thoroughly inspected and passed upon, especially those going to neutral countries, so that the work done at Kirkwall or Gibraltar can be done at a large measure, done away with—thereby, not only saving time and trouble but eliminating a large amount of the friction now caused by the British censorship. The censoring of cargoes on loading is obviously easier and more certain than when a ship is stopped en route. Also another piece of work which this country has felt has been badly done in England can be done here—the censorship of mail, cable, and wireless in the United States is our work and will be of great assistance to the Allies.

CONTROL OF SHIPBUILDING

Of course, the next step after putting control of our shipping into the hands of the Government is the commandeering of all our shipbuilding plants, which Congress has already considered. About half the tonnage building now in the United States for foreign governments is contracted for by Norwegian firms.

Under similar circumstances abroad such ships were taken by the nations where they were building. In any case, after the war, we are likely to find that we have finally acquired a great merchant marine, and if we can reform our navigation laws so as to give shipping a fair chance we will again be one of the great seafaring nations.

However, unless we go further in our organization for transportation, this control of shipping will lose a great part of its value. On February 5th, Congress took up the question of control of railroads and telegraph lines. This is, of course, one of the first necessary steps. There are to-day running into the great Eastern seaboard ports of the United States enough railroads to supply not only all the shipping the ports can take care of, but also the legitimate business of those ports. But there is little national coöperation between these roads. One of the underlying troubles of coal famines, high food prices and freight congestion is that each road



MR. HOWARD E. COFFIN

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One of the men particularly responsible for the creation of the Council of National Defense, which is designed to bring all the forces of transportation, industry, and labor into effective use in time of war, a task which is impossible without provision for universal service of industry as well as of men

is trying to work out the problem more or less alone. England quickly came to a railroad dictator, and then France, and now finally Russia has come to the same point. It took some of those countries as much as two years to come to it, but they have proved that it is not only necessary but effective, and it is a lesson that the United States should take cognizance of and adopt before the railroads fail us and we are forced to it through failure to learn a lesson from others.

Mr. Daniel Willard, the president of the Baltimore & Ohio Railroad, was selected as a member of the Advisory Commission of the Council of National Defense to organize the railroads so that they could be of the greatest use in time of war. The railroads need his direction now. There is a great and costly freight congestion. The railroads struggle with it as best they can, but under multitudinous direction and many embarrassments. The Interstate

Commerce Commission, the federal body having most to do with their affairs, has no power to help the situation. To do our utmost to help the Allies and incidentally ourselves we need the power of the Federal Government centred in the hands of one man to deal with the rail transportation in coöperation with a similar controller of shipping, finance, munitions, etc.

The legal neutrality of the country has prevented the Government from aiding and encouraging the economic alliance which we have had with the Entente Allies ever since the war began—an alliance which, as the Germans have pointed out, is much to our advantage. But now, if the Government should use its power to make that economic coöperation more effective we could by just that much help the Allies to win—and, in so doing, win ourselves; for any active operations of our own against Germany must for some time be confined to submarine chasing and economic pressure.

But in certain Allied circles it is said that a couple of corps, 80,000 American soldiers, in France, would help materially to shorten the war even if they never got farther than the training camps. For if we had 80,000 men training in France and a real army in training here for any possible contingency that might arise, it would be complete proof to Germany that sooner or later she was doomed. The German army laughed at the small beginnings of Kitchener's army. They would not laugh at any similar small force again.

And this brings us again to the question of organization. Would not the equipping of an American army interfere with the delivery of munitions to the Allies and do them more harm than our army could ever do good?

Almost immediately after the severance of diplomatic relations with Germany, Congress took up the question of control of shipbuilding yards and all industrial plants needed for putting the Nation upon a war footing in the shortest possible time.

There is a definite danger that the United States in preparing for a war with Germany may do irretrievable harm to the Allies by this very move, unless it is carefully thought out. And, thereby, we should irretrievably harm ourselves; for the object of the United States is to protect our rights and the ideals of democracy and humanity. To achieve that object the downfall of Prussian militarism is essential. Therefore, as we can achieve that end only through the Allies, it would be a fatal blunder on the part of this country to be so shortsighted as to cripple them when they are fighting for that very end which the United States stands for.

Russia to-day has large orders for small arms and other munitions placed in the United States. One of the main reasons why the Russian campaigns have been unsuccessful has been the shortage of munitions. To-day there is only one rifle for every four men in their armies. Japan and the United States are the two greatest sources of supply to Russia. If, by unintelligent commandeering of plants, we should stop shipments of these supplies to Russia, we shall be defeating our own ends.



Copyright by Paul Thompson

MR. J. P. MORGAN

As agent for the Allies his house has had the largest share in the transactions which have changed the United States from a debtor to a creditor nation



MR. H. P. DAVISON

Of J. P. Morgan & Company, the chief agents of the Allied governments in this country both for borrowing money and for spending it, and therefore the chief conduit of our prosperity based on export



Copyright by Harris & Ewing

THE FEDERAL RESERVE BOARD

The head of the Government banking system which has been prevented by neutrality from giving any aid to the financing of our foreign trade, the chief cause of our present prosperity, but which could greatly enlarge the Allies' purchasing power in the United States

If there were any immediate danger to the United States; if there were any reason to believe that these supplies could be used immediately by our authorities, there might be some reason for it. But the specifications for our ordnance and munitions are not the same as those on the supplies which our private firms are making for Europe, and it would take almost as long to readjust the machinery and start making supplies for our army as it would to turn some of the manufacturing plants in the United States into plants for war material.

The other great danger is that we should hold up the shipments of raw materials to France and England. These two countries are not dependent upon us for manufactured products, but they are dependent for a large part of their raw materials. To stop these shipments would mean, first, the shutting down of the factories, then the shortage of munitions at the front, and ultimately, if kept up long enough, the final defeat of the Allies and the triumph of Prussian militarism and autocracy.

If our Government commandeers private works or calls for bids indiscriminately,

the result will be chaos, high prices, and delay. But this is not necessary. The committee of the Naval Consulting Board of which Mr. Howard E. Coffin was chairman, compiled a list of 27,000 manufacturing concerns in the United States that can make war materials.

This inventory is now in the hands of the Council of National Defense, which is made up of six members of the Cabinet. It was organized to coördinate our effort in case of war. It is the body which every citizen should hold responsible for the organization of the Nation.

Shortly after the beginning of the war England, France, and Russia sent commissions to the United States to buy munitions. Without collaborating they started to bid against each other, and naturally prices soared. Finally they got together and now are buying jointly. The Council of National Defense should confer with the Allies so that the needs and interests of the United States are mutually served but not to the detriment or crippling of the Allies and to the infinite advantage of Germany.



MR. DANIEL WILLARD

President of the Baltimore & Ohio Railroad and a member of the Advisory Commission of the Council of National Defense, in which capacity in war time he could be of immense service to the country in controlling all railroads as Colonel Thornton has control of all railroad transportation in England

We must make certain that in every move of our preparedness we are working toward the destruction of Prussian militarism and not in any way impeding any action that goes toward that achievement.

However, such a state involves immediately the great problem—perhaps the gravest which France and England had to face—labor. Certainly, to fulfil adequately our obligations the eight-hour day in all work pertaining to preparedness must go until after the war. Secretary Daniels has already advocated suspending

the eight-hour day in all navy work. There were Englishmen who, early in the war, did not conceive the proportions of the situations; they talked of England "doing her share." It is not a question of "share." Each bit of new energy and achievement means that the duration of the war will be shortened by a little; therefore, it behooves each country not to divide the problem into parts and each take one of them, but each to do its utmost and add it all to the common effort. And the United States will not and cannot do its utmost if labor



FREIGHT CONGESTION

A condition growing out of the war which cannot be remedied by the railroads acting independently and without Government power, but which can be managed by a Government controller of military and civil transportation

does not willingly help in carrying out the war work of the United States. Labor disputes, wage disputes, time disputes

should every one be submitted to an arbitration board, and if either the labor or the employers do not abide by the decision,



MR. P. A. S. FRANKLIN

Vice-president of the International Mercantile Marine, under whose charge both English and American vessels are sailing to Europe—among these being the only American ships carrying American mail to Europe

then is the time for the Government to step in and take control.

England and France have settled these troubles at least for the duration of the war, and once again we should take a leaf out of their book of experience and profit by it, rather than go through their same difficulties.

Underlying most labor disputes is the question of the cost of living, and the price of food is the greatest part of that question. There does not seem to be any danger, no matter how long the war may last, of an actual shortage of food in this country such as there is in Europe. The Allies are borrowing the money from us with which to pay for the food that they buy from us. Because of this increased European demand we are now bidding against Europe for our own food supply and prices are soaring. The food situation is analogous to the munitions situation at the beginning of the war when the Allies, with money from the same sources, were bidding against each other for American war material.

During the last year there were many

food-price scandals in the United States dealers holding supplies for higher price speculative corners in certain commodities and other devices of unscrupulous gamblers to raise the prices to the public. The answer to such a situation is, of course simple—and it was one of the first move made in the warring countries—the fixing of maximum prices for foodstuffs. There is a need, and a great need, for a commission to fix these maximum prices. Mr. Hoover says, in regard to his relief of Belgium, that he has worked out his food relief scheme only for the middle and laboring classes. "I have never seen," said he, "the time when the rich cannot get food. They can take care of themselves. And, by and large, the farmer will see that he and his family have enough. Our problem has been the middle classes and labor."

Similar testimony is reported in the experience of Austria-Hungary by Mr. Wolf von Schierbrand in the *North American Review* for January. He says:

"The fighting men at the front get fairly enough to eat. But in the 'hinterland' the civilian population suffers more or less severely from an insufficiency of nourishing food. . . .

"If the foodstuffs of both Hungary and Austria were put into a joint pool, so to speak, and the people of the whole monarchy fed out of it evenly there would be no serious difficulty. It would mean that everybody would receive about 70 per cent. of the normal supply of peace days. But Hungary is a sovereign state, just as much as Austria is, and Hungarians do not propose to stint themselves to please the people of the other half of the dual monarchy. Thus it is that Austria goes short in her rations—alarmingly short."

These experiences point the way to our course in controlling food supplies. They indicate that the food problem is more one of distribution than of quantity and that our duty is to govern distribution so that there will be no excessive high prices here and also so that we should not work at cross purposes with the Allies, whose cause is patently our own.

So we may regulate our food prices, and perhaps the general distribution of our



SHIPBUILDING ACTIVITY IN THE UNITED STATES

During the last year 560,000 tons of new shipping was built in this country, about 25 per cent. of the amount sunk by the Germans in 1916. Part of this shipping was built for foreign countries. Twice that amount has been contracted for to be finished during the next year

food supply over the whole country. Primarily, this move will tend to lessen labor troubles; moreover, equally as important is the fact that we will not be defeating Prussianism if we do not organize in every way. It is not right that we should allow food speculators to make huge fortunes from France and England, as well as from ourselves. We must fix

maximum prices not only for home food supplies but also for our export shipments.

The foregoing is a general outline of some of the main steps which we can take to best help the Allies from their point of view. But each and every step is of distinct advantage to the United States in many ways. Primarily they are the logical and essential steps which we can



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INTERNEED GERMAN MERCHANTMEN

About 500,000 tons of merchant shipping is interned in harbors of the United States. The Government take over, renovate, and use this shipping to great advantage both to ourselves and the Entente Allies.

take to destroy the imperialistic idea of the Prussian Government and to bring about the coveted condition which President Wilson set forth in his speech before the Senate: the triumph of Democracy and the equal rights of all peoples to a voice in their government; secondarily, they will bring to us, unless we completely fail to take advantage of our opportunity, a great merchant marine; universal military ser-

vice, with adequate preparedness for defense of our country; a financial and economic equality with the great nations of the world; an international consciousness; and, most important of all, a national unity of feeling and purpose, forever eliminating the various race elements of our population by amalgamating them into a cohesive and single-minded nation. Americans, first, last, and all the time.



SHIPPING CONGESTION

Because of the lack of collaboration between the railroad and shipping agencies, great delays and congestion are inevitable. Control and coordination of all transportation would be of infinite advantage to the Allies, to whom most of our products go, and of equal profit to ourselves.



FLYING FOR FRANCE

FURTHER EXPERIENCES OF AN AVIATOR IN THE AMERICAN ESCADRILLE IN FRANCE—
HOW KIFFIN ROCKWELL DIED, AND THE UNFORTUNATE ACCIDENT THAT KILLED
NORMAN PRINCE—THE EVERY-DAY LIFE OF THE FLYING MEN

BY

JAMES R. McCONNELL

(SERGEANT PILOT OF THE AMERICAN ESCADRILLE)

ON THE 12th of October, twenty small airplanes flying in a "V" formation, at such height that they resembled a flock of geese, crossed the River Rhine, where it skirts the plains of Alsace, and, turning north, headed for the famous Mauser works at Oberndorf. Following in their wake was an equal number of larger machines, and above these darted and circled swift fighting 'planes. The first group of aircraft was flown by British pilots, the second by French, and three of the fighting 'planes by Americans in the French aviation. It was a cosmopolitan collection that effected that successful raid.

We American pilots, who are grouped into one escadrille, had been fighting above the battlefield of Verdun from the 20th of May until orders came in the middle of September for us to leave our airplanes for a unit that would replace us, and to report at Le Bourget, the great aviation centre at Paris. The mechanics and the rest of the personnel left, as usual, in the escadrille's trucks with the material. For once the pilots did not take the aerial route and they boarded the Parisexpress at Bar-le-Duc with all the enthusiasm of school boys off for a vacation. They were to have a week in the Capital! Where they were to go after that they did not know, but presumed it



THE MEN OF THE AMERICAN ESCADRILLE

Young Americans who are aiding France in maintaining her supremacy in the air. From left to right: Lieutenant de Laage de Mieux (the French Instructor), Johnson, Rumsey, McConnell, Thaw, Lufbery, Rockwell, Masson, Prince, and Hall



THE PEACEFUL RETREAT OF THE AIR FIGHTERS

The Escadrille has, as a general rule, been quartered in villages behind the firing lines and far removed from the noise and strife of battle

would be to the Somme. As a matter of fact, the escadrille was to be sent to the town of Luxeuil, in the Vosges, to take part in the Mauser raid.

Besides Captain Thenault and Lieutenant de Laage de Mieux, our French officers,

the following American pilots were in the escadrille at this time: Lieutenant Thaw, who had returned to the front, even though his wounded arm had not entirely healed; Adjutants Norman Prince, Hall, Lufbery, and Masson; and Sergeants Kiffin Rock-



THE INSIGNIA OF THE AMERICAN ESCADRILLE

The modern crusader of the air, like the crusader of old who emblazoned his crest on his shield, carries his device on the side of his airplane. Each plane of the American Escadrille has an Indian head painted upon its side



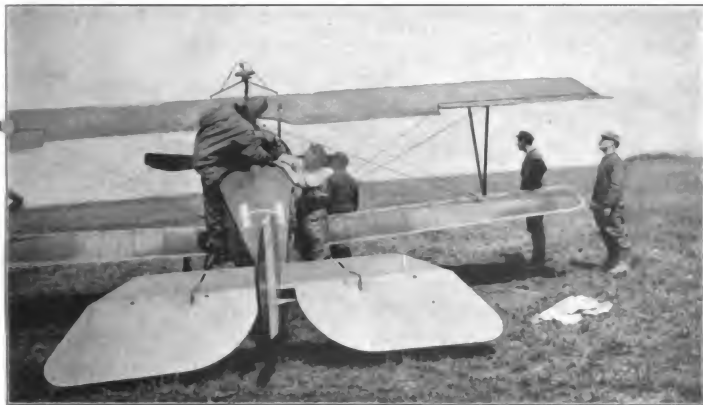
THE DREADNAUGHT OF THE AIR

The huge Breguet air cruiser which is used for bombardment purposes and carries machine guns as well as racks for launching bombs

well, Hill, Pavelka, Johnson, and Rumsey. I had been sent to a hospital toward the end of August, because of a lame back resulting from a smash-up in landing, and couldn't follow the Escadrille until later.

Every aviation unit boasts several mas-

cots. Dogs of every description are to be seen around the camps, but the Americans managed, during their stay in Paris, to add to their menagerie a lion cub named "Whiskey." The little chap had been born on a boat crossing from Africa and was



THE BATTLE CRUISER OF THE AIR

The new model Nieuport fighting machine mounts at great speed, rising to 7,000 feet in six minutes, and flies as high as 20,000 feet. The machine gun is mounted on the hood and shoots through the rapidly revolving propeller

advertised for sale in France. Some of the American pilots chipped in and bought him. He was a cute, bright-eyed baby lion who tried to roar in a most threatening manner, but who was blissfully content the moment one gave him one's finger to suck. "Whiskey" got a good view of Paris during the few days he was there, for some one in the crowd was always borrowing him to take some place. Like most lions in captivity, he became acquainted with bars; but the sort "Whiskey" saw were not for purposes of confinement.

The orders came directing the Escadrille to Luxeuil and, bidding farewell to gay "Paree," the men boarded the Belfort train with bag and baggage—and the lion. Lions, it developed, were not allowed in passenger coaches. The conductor was assured that "Whiskey" was quite harmless, and was going to overlook the rules when the cub began to roar and tried to get at the railroad man's finger. That settled

it, so two of the men had to stay behind in order to crate up "Whiskey" and take him along the next day.

The Escadrille was joined in Paris by Robert Rockwell, of Cincinnati, who had finished his training as a pilot, and was waiting at the Reserve. He had gone to France to work as a surgeon in one of the American war hospitals. He disliked remaining in the rear, and eventually enlisted in aviation.

The period of training for a pilot, especially for one who is to fly a fighting machine at the front, has been very much prolonged. It is no longer sufficient that he learn to fly and to master various types of machines. He now completes his training in schools where aerial shooting is taught, and in others where he practises combat, group manoeuvres, and acrobatic stunts such as looping the loop and the more difficult tricks. In all, it requires from seven to nine months.



F. O. B. FIRING LINE

The bodies of the airplanes are transported to the aviation field in specially constructed trucks, and the wings are attached to the machines on the field



THE HANGARS OF THE BIRDMEN

"The rumble of heavy artillery reaches us in a heavy volume of sound. One can see the high flying airplanes darting like swallows in the shrapnel puffs of anti-aircraft fire"



SERGEANT "BERT" HALL

Who has his name in reverse on the left side of his airplane "so that an aviator passing him on that side will be able to read it"

Dennis Dowd, of Brooklyn, N. Y., is, so far, the only American volunteer aviator killed while in training. Dowd, who had joined the Foreign Legion shortly after the war broke out, was painfully wounded during the offensive in Champagne. After his recovery he was transferred, at his request, into aviation. At the Buc school he stood at the head of the fifteen Americans who were learning to be aviators, and was considered one of the most promising pilots in the training camp. On August 11, 1916, while making a flight preliminary to his brevet, Dowd fell from a height of only 80 metres (260 feet) and was instantly killed. Either he had fainted or a control had broken.

While a patient at the hospital, Dowd had been sent packages by a young French girl of Neuilly. A correspondence ensued, and when Dowd went to Paris on convalescent leave, he and the young lady became engaged. He was killed just before

the time set for the wedding.

When the Escadrille arrived at Luxeuil, it found a great surprise in the form of a large British aviation contingent. This detachment, from the Royal Navy Flying Corps, numbered more than fifty pilots and a thousand men. New hangars harbored their fleet of bombardment machines. Their own anti-aircraft batteries were in emplacements near the field. Though detached from the Brit-

ish forces and under French command, this unit followed the rule for His Majesty's armies in France by receiving all its food and supplies from England. It had its transport service.

The Escadrille had been in Luxeuil during the months of April and May. We had made many friends among the townspeople and the French pilots stationed there, so the old members of the American unit were welcomed with open arms and their new comrades made to feel at home in the



THE POILU IS KEENLY INTERESTED IN AIRCRAFT

"There is little difference between the English, French, and American aviators. The Frenchman is the most natural pilot and the most adroit. But the Englishman and the American, while more calm, obtain the same results"

quaint Vosges town. It wasn't long, however, before the Americans and the British got together. At first there was a feeling of reserve on both sides, but, once acquainted, they became fast friends. The Naval pilots were quite representative of the United Kingdom, hailing, as they did, from England, Canada, New South Wales, South Africa, and other parts of the Empire. Most of them were soldiers by profession. All were officers, but they were as democratic as it is possible to be. As a result there was a continuous exchange of dinners. In a few days every one in this Anglo-American alliance was calling each other by some nickname and swearing lifelong friendship.

"We didn't know what you Yanks would be like," remarked one of the Englishmen one day. "Thought you might be snobby on account of being volunteers, but I swear you're a bally human lot." That, I will explain, is a very fine compliment.

There was trouble getting new airplanes for every one in the Escadrille. Only five arrived. They were the new model Nieuport fighting machines. Instead of having only thirteen square metres of supporting surface, they had fifteen, and the forty-seven-shot Lewis machine guns had been replaced by the Vickers, which fires five hundred rounds. This gun is mounted on the hood, and, by means of a timing gear, shoots through the propeller. The 15-metre Nieuport mounts at a terrific rate, rising to 7,000 feet in six minutes. It will

go to 20,000 feet when it is handled by a skilful pilot.

It was some time before the airplane arrived, and every one was idle. There was nothing to do but loaf around the hotel, where the American pilots were quartered, visit the British in their barracks at the field, or go walking. It was about as much like war as a Bryan lecture. While I was in the hospital I received a letter written at this time from one of the boys. I opened it, expecting to read of an aerial combat. It informed me that Thaw had caught a trout three feet long, and that Lufbery had succeeded in picking two baskets of mushrooms.

Day after day the British 'planes practised formation flying. The regularity with which the squadron's machines would leave the ground was remarkable. The twenty Sopwiths took the air at precise intervals, flew together in a "V" formation while executing difficult manoeuvres, and landed one after the other with the



"WHISKEY"

The mascot of the American Escadrille, with the late Lieutenant Kiffin Rockwell and Lieutenant William Thaw. "He was a cute, bright-eyed baby lion, who tried to roar in the most threatening manner, but who was blissfully content the moment one gave him one's finger to suck."

exactness of clockwork. The French pilots flew the Farman and Breguet bombardment machines whenever the weather permitted. Every one knew some big bombardment was ahead, but when it would be made or what place was to be attacked was a secret.

Considering the number of machines that were continually roaring above the field of Luxeuil, it is remarkable that only two fatal accidents occurred. One was when a British pilot tried diving at a target, for machine-gun practice, and was unable to

redress his airplane. Both he and his gunner were killed. In the second accident I lost a good friend—a young Frenchman. He took up his gunner in a two-seated Nieuport. A young Canadian pilot, accompanied by a French officer, followed in a Sopwith. When at about a thousand feet the airmen began to manœuvre about each other. In making a turn too close the tips of their wings touched. The Nieuport turned downward, its wings folded, and it fell like a stone. The Sopwith fluttered a second or two, then its wings buckled and it dropped in the wake of the Nieuport. The two men in each of the 'planes were killed outright.



SERGEANT JAMES R. McCONNELL

Who went to France in January, 1915, as an ambulance driver. "The more I saw the splendor of the fight the French were fighting the more I began to feel like an *embusqué* (slacker). So I made up my mind to go into aviation"

Next to falling in flames, a drop in a wrecked machine is the worst death an aviator can meet. I know of no sound more terrible than that made by an airplane crashing to earth. Breathless, one has watched the uncontrolled apparatus tumble through the air. The agony felt by the pilot and passenger seems to transmit itself to you. You are helpless to avert the certain death. You cannot even turn your eyes away at the moment of impact. In the dull, grinding crash there is the sound of breaking bones.

Luxeuil was an excellent place to observe the difference that exists between the French and English and American aviator,



THE WAR EAGLE'S AERY

"The roar of motors that are being tested is punctuated by the staccato barking of machine guns and at intervals the hollow whistling sound of a fast 'plane diving to earth is added to this symphony of war notes"

DEAD ON THE FIELD OF HONOR



THE LATE CORP. VICTOR CHAPMAN

Killed over the battlefields before Verdun while defending two other members of the Escadrille from the enemy. "To lose Victor was not merely an irreparable loss to us but to France and to the world as well"



THE LATE LIEUT. NORMAN PRINCE

Killed while returning from the bombardment of Oberndorf on October 12, 1916. His machine became entangled in an electric wire over the field. Although mortally hurt he immediately gave orders to have the field illuminated to avoid other like accidents

but when all is said and done there is but little difference. The Frenchman is the most natural pilot and the most adroit. Flying comes easier to him than to an Englishman or American, but once accustomed to an airplane and the air they all accomplish the same amount of work. A Frenchman goes about it with a little more dash than the others, and puts on a few extra frills, but the Englishman calmly carries out his mission and obtains the same results. An American is a combination of the two, but neither better nor worse. Though there is a large number of expert German airmen, I do not believe the average Teuton makes as good a flier as a Frenchman, Englishman, or American.

Despite their bombardment of open towns and the use of explosive bullets in their aerial machine guns, the Boches have shown up in a better light in aviation than in any other arm. A few of the Hun pilots have even evinced certain elements of honor and decency.

I remember one chap who was the right



THE LATE LIEUT. KIFFIN ROCKWELL

Killed in combat in the air on September 23, 1916. "I pay my debt for Lafayette and Rochambeau" was the way he viewed his service to France

sort. He was a young man but a pilot of long standing. An old infantry captain stationed near his aviation field at Etain, east of Verdun, prevailed upon this German pilot to take him on a flight. There was a new machine to test out and he told the captain to climb aboard. Foolishly, he crossed the trench lines and, actuated by a desire to give his passenger an interesting trip, proceeded to fly over the French aviation headquarters.

Unfortunately for him, he encountered three French fighting planes, which promptly opened fire. The German pilot was wounded in the leg and the gasoline tank of his airplane pierced. Under him was an aviation field. He decided to

land. The machine was captured before the Germans had time to burn it up. Explosive bullets were discovered in the machine gun. A French officer turned to the German captain and informed him that he would probably be shot for using explosive bullets. The captain did not understand.

"Don't shoot him," said the pilot, using

excellent French. "If you are going to shoot any one, take me. The captain has nothing to do with the bullets. He doesn't even know how to work a machine gun. It's his first trip in an airplane."

"Well, if you'll give us some good information, we won't shoot you," said the French officer.

"Information!" replied the German. "I can't give you any. I come from Etain, and you know where that is as well as I do."

"No, you must give us some worthwhile information, or I'm afraid you'll be shot," insisted the Frenchman.

"If I give you worth-while information," answered the pilot, "you'll go over and kill a lot of soldiers, and if I don't you'll kill one—so go ahead."

The last time I heard of the Boche he was being well taken care of.

HOW KIFFIN ROCKWELL DIED

Kiffin Rockwell and Lufbery were the first to get their new machines ready and, on the 23d of September, went out for the first flight since the Escadrille had arrived at Luxeuil. They became separated in the air, but each flew on alone; which was a dangerous thing to do in the Alsace sector. There is but little fighting in the trenches there, but great aerial activity. Due to the British and French squadrons at Luxeuil, and the threat their presence implied, the Germans had to oppose them by a large fleet of fighting machines. I believe there were more than forty Fokkers alone in the camps of Kolmar and Habsheim. Observation machines, protected by two or three fighting 'planes, would venture far into our lines. It is something the Germans dare not do on any other part of the front. They had a special trick that consisted in sending a large, slow observation machine into our lines to invite attack. When a French 'plane would dive after it, two Fokkers, hovering high overhead, would drop on the tail of the Frenchman, and he stood but small chance if caught in the trap.

Just before Kiffin Rockwell reached the lines he spied a German machine under him, flying at 3,500 metres. I can imagine the satisfaction he felt in at last catching an enemy 'plane in our lines. Rockwell had fought more combats than the rest of

us put together, and had shot down many German machines that had fallen in their lines, but this was the first time he had had an opportunity of bringing down a Boche in our territory.

A captain, the commandant of an Alsatian village, watched the aerial battle through his field glasses. He said that Rockwell approached so close to the enemy that he thought there would be a collision. The German craft, which carried two machine guns, had opened a rapid fire when Rockwell started his dive. He plunged through the stream of lead, and only when very close to his enemy did he begin shooting. For a second it looked as though the German was falling, so the Captain said, but then he saw the French machine turn rapidly, nose down; the wings on one side broke off and fluttered in the wake of the airplane, which hurtled earthward in a rapid drop. It crashed into the ground in a small field—a field of flowers—a few hundred yards back of the trenches. It was not more than two and a half miles from the spot where Rockwell, in the month of May, brought down his first enemy machine. The Germans immediately opened up on the wreck with artillery fire. Despite the bursting shrapnel, gunners from a near-by battery rushed out and recovered poor Rockwell's broken body. There was a hideous wound in his breast where an explosive bullet had torn through. A surgeon who examined the body testified that if it had been an ordinary bullet Rockwell would have had an even chance of landing with only a bad wound. As it was, he was killed the instant the unlawful missile exploded in his breast.

Lufbery engaged a German craft, but before he could get to close range two Fokkers swooped down from behind and filled his airplane full of holes. Exhausting his ammunition, he landed at Fontaine, an aviation field near the lines. There he learned of Rockwell's death, and was told that two other French machines had been brought down within the hour. He ordered his gasoline tank filled, procured a full band of cartridges, and soared up into the air to avenge his comrade. He sped up and down the lines, and made a wide détour to Habsheim, where the Germans have an

aviation field, but all to no avail. Not a Boche was in the air.

The news of Rockwell's death was telephoned to the Escadrille. The captain, lieutenant, and a couple of the men jumped in a staff car and hastened to where he had fallen. On their return, the American pilots were convened in a room of the hotel and the news was broken to them. With tears in his eyes, the captain said: "The best and bravest of us all is no more."

No greater blow could have befallen the Escadrille. Kiffin was its soul. He was loved and looked up to by not only every man in our flying corps but by every one who knew him. Kiffin was imbued with the spirit of the cause for which he fought and gave his heart and soul to the performance of his duty. He said: "I pay my debt for Lafayette and Rochambeau," and he gave the fullest measure. The old flame of chivalry burned brightly in the boy's fine and sensitive being. With his death, France lost one of her most valuable pilots. When he was over the lines, the Germans did not pass—and he was over them most of the time. He brought down four enemy 'planes that were credited to him officially, and Lieutenant de Laage, who was his fighting partner, says he is convinced that Rockwell accounted for many others which fell too far within the German lines to be observed. Rockwell had been given the *Médaille Militaire* and the *Croix de Guerre*, on the ribbon of which he wore four palms, representing the four magnificent citations he had received in the order of the army. As a further reward for his excellent work he had been proposed for promotion from the grade of sergeant to that of second lieutenant. Unfortunately, the official order did not arrive until a few days following his death.

The night before Rockwell was killed, he had stated that if he were brought down he would like to be buried where he fell. It was impossible, however, to place him in a grave so near the trenches. His body was draped in a French flag and brought back to Luxeuil. He was given a funeral worthy of a general. His brother Paul, who had fought in the Legion with him, and who had been rendered unfit for service by a wound, was granted permission to attend the

obsequies. Pilots from all near-by camps flew over to render homage to Rockwell's remains. Every Frenchman in the aviation at Luxeuil marched behind the bier. The British pilots, followed by a detachment of five hundred of their men, were in line, and a battalion of French troops brought up the rear. As the slow-moving procession of blue and khaki clad men passed from the church to the graveyard, airplanes circled at a feeble height above and showered down myriads of flowers.

Rockwell's death urged the rest of the men to greater action, and the few who had machines were constantly after the Boches. Prince brought down one. Lufbery, the most skilful and successful fighter in the Escadrille, would venture far into the enemy's lines and spiral down over a German aviation camp, daring the pilots to venture forth. One day he stirred them up, but as he was short of fuel he had to make for home before they took to the air. Prince was out in search of a combat at this time. He got it. He ran into the crowd Lufbery had aroused. Bullets cut into his machine and one, exploding on the front edge of a lower wing, broke it. Another shattered a supporting mast. It was a miracle that the machine did not give way. As badly battered as it was, Prince succeeded in bringing it back from over Mulhouse, where the fight occurred, to his field at Luxeuil.

LUFBERY'S "FIGHTING ACQUAINTANCE"

The same day that Prince was so nearly brought down, Lufbery missed death by a very small margin. He had taken on more gasoline and made another sortie. When over the lines again, he encountered a German with whom he had a fighting acquaintance. That is, he and the Boche, who was an excellent pilot, had tried to kill each other on one or two occasions before. Each was too good for the other. Lufbery manoeuvred for position but, before he could shoot, the Teuton would evade him by a clever turn. They kept after each other, the Boche retreating into his lines. When they were nearing Habsheim, Lufbery glanced back and saw French shrapnel bursting over the trenches. It meant a German 'plane was over French territory

and it was his duty to drive it off. Swooping down near his adversary he waved good-bye, the enemy pilot did likewise, and Lufbery whirled off to chase the other representative of Kultur. He caught up with him and dove to the attack, but he was surprised by a German he had not seen. Before he could escape, three bullets entered his motor, two passed through the fur-lined combination he wore, another ripped open one of his woollen flying boots, his airplane was riddled from wing tip to wing tip, and other bullets cut the elevating plane. Had he not been an exceptional aviator, he never would have brought safely to earth so badly damaged a machine. It was so thoroughly shot up that it was junked as being beyond repair. Fortunately Lufbery was over French territory, or his forced descent would have resulted in his being made prisoner.

I know of only one other airplane that was safely landed after receiving as heavy punishment as did Lufbery's. It was a two-place Nieuport piloted by a young Frenchman named Fontaine, with whom I trained. He and his gunner attacked a German over the Bois le Prêtre who dove rapidly far into his lines. Fontaine followed and in turn was attacked by three other Boches. He dropped to escape, they plunged after him, forcing him lower. He looked and saw a German aviation field under him. He was by this time only 2,000 feet above the ground. Fontaine saw the mechanics rush out to grab him, thinking he would land. The attacking airplanes had stopped shooting. Fontaine pulled on full power and headed for the lines. The German 'planes dropped down on him and again opened fire. They were on his level, behind, and on his sides. Bullets whistled by him in streams. The rapid-fire gun on Fontaine's machine had jammed and he was helpless. His gunner fell forward on him, dead. The trenches were just ahead, but as he was slanting downward to gain speed, he had lost a good deal of height, and was at only six hundred feet when he crossed the lines, from which he received a ground fire. The Germans gave up the chase and Fontaine landed. His wings were so full of holes that they barely supported the machine in the air.

The uncertain wait at Luxeuil finally came to an end on the 12th of October. The afternoon of that day the British did not say, "Come on Yanks, let's call off the war and have tea," as was their wont, for the bombardment of Oberndorf was on. The British and the French machines had been prepared. Just before climbing into their airplanes the pilots were given their orders. The English, in their single-seated Sopwiths, which carried four bombs each, were the first to leave. The big French Breguets and Farmans then soared aloft with their tons of explosive destined for the Mauser works. The fighting machines, which were to convoy them as far as the Rhine, rapidly gained their height and circled over their charges. Four of the battle 'planes were from the American Escadrille. They were piloted respectively by Lieutenant de Laage, Lufbery, Norman Prince, and Masson.

THE BOMBARDMENT OF OBERNDORF

The Germans were taken by surprise, and as a result few of their machines were in the air. The bombardment fleet was attacked, however, and six of its 'planes shot down, some of them falling in flames. Baron, the famous French night bombarder, lost his life in one of the Farmans. Two Germans were brought down by machines they attacked, and four pilots from the American Escadrille accounted for one each. Lieutenant de Laage shot down his Boche as it was attacking another French machine, and Masson did likewise. Explaining it afterward, he said: "All of a sudden I saw a Boche come in between me and a Breguet I was following. I just began to shoot, and darned if he didn't fall."

As the full capacity of a Nieuport allows but little more than two hours in the air, the *avions de chasse* were forced to return to their own lines to take on more gasoline, while the bombardment 'planes continued on into Germany. The Sopwiths arrived first at Oberndorf. Dropping low over the Mauser works, they discharged their bombs and headed homeward. All arrived, save one, whose pilot lost his way and came to earth in Switzerland. When the big machines got to Oberndorf they saw only flames and smoke where once the rifle fac-

tory stood. They unloaded their explosives on the burning wreckage.

The Nieuports, having refilled their tanks, went up to clear the air of any German machines that might be hovering in wait for the returning raiders. Prince found one, and promptly shot it down. Lufbery came upon three. He dove for one, making it drop below the others; then, forcing a second to descend, attacked the one remaining above. The combat was short, and at the end of it the German tumbled to earth. This made the fifth enemy machine which was officially credited to Lufbery. When a pilot has accounted for five Boches he is mentioned in the official communication, and is spoken of as an "Ace," which in French aerial slang means a super-pilot. Papers are allowed to call an "Ace" by name, print his pictures, and give him a write-up. The successful aviator becomes a national hero. When Lufbery worked into this category the French papers made him a headliner. The American "Ace," with his string of medals, then came in for the attentions that afflict a matinee idol. The choicest bit in the collection was a letter from Wallingford, Conn., his home town, thanking him for putting it on the map.

THE ACCIDENT THAT KILLED PRINCE

Darkness was coming rapidly on, but Prince and Lufbery remained in the air to protect the bombardment fleet. Just at nightfall, Lufbery made for a small aviation field near the lines, known as Corcieux. Slow-moving machines, with great planing capacity, can be landed in the dark, but to try and feel for the ground in a Nieuport, which comes down at about a hundred miles an hour, is to court disaster. Ten minutes after Lufbery landed, Prince decided to make for the field. He spiraled down through the night air and skimmed rapidly over the trees bordering the Corcieux field. In the dark he did not see a high-tension electric cable that was stretched just above the tree tops. The landing gear of his airplane struck it. The machine snapped forward and hit the ground on its nose. It turned over and over. The belt holding Prince broke and he was thrown far from the wrecked plane.

Both of his legs were broken and he naturally suffered internal injuries. Despite the terrific shock and his intense pain, Prince did not lose consciousness. He even kept presence of mind and gave orders to the men who had run to pick him up. Hearing the hum of a motor, and realizing a machine was in the air, Prince told them to light fires on the field. "You don't want another fellow to come down and break himself up the way I've done," he said.

Lufbery went with Prince to the hospital in Gérardmer. As the ambulance rolled along Prince sang to keep up his spirits. He spoke of getting well soon and returning to service. It was like Norman. He was always energetic about his flying. Even when he passed through the harrowing experience of having a wing shattered, the first thing he did on landing was to busy himself about getting another fitted in place.

"DECORATED" ON HIS DEATHBED

No one thought that Prince was mortally injured, but the next day he went into a coma; a blood clot had formed on his brain. Captain Haff, in command of the aviation groups of Luxeuil, accompanied by our officers, hastened to Gérardmer. Prince, lying unconscious on his bed, was named a second lieutenant and decorated with the Legion of Honor. He already held the *Médaille Militaire* and *Croix de Guerre*. Norman Prince died on the 15th of October. He was brought back to Luxeuil and given a funeral similar to Rockwell's. It was hard to realize that poor old Norman had gone. He was the founder of the American Escadrille, and every one in it had come to rely on him. He never let his own spirits drop, and was always on hand with encouragement for the others. I do not think Prince minded going. He wanted to do his part before being killed, and he had more than done it. He had, day after day, freed the line of Germans, making it impossible for them to do their work, and three of them he had shot to death.

Two days after Prince's death, the Escadrille received orders to leave for the Somme. The night before the departure the British gave the American pilots a farewell banquet and toasted them as their

"guardian angels." They keenly appreciated the fact that four men from the American Escadrille had brought down four Germans, and had cleared the way for their squadron returning from Oberndorf. When the train pulled out the next day, the station platform was packed with khaki-clad pilots waving good-bye to their friends, the "Yanks."

The Escadrille passed through Paris on its way to the Somme front. The few members who had machines flew from Luxeuil to their new post. At Paris the pilots were reinforced by three other American boys who had completed their training. They were Fred Prince, who, ten months before, had come over from Boston to serve in aviation with his brother Norman; Willis Haviland, of Chicago, who left the American Ambulance for the life of a birdman; and Bob Soubrian, of New York, who had been transferred from the Foreign Legion to the flying corps after being wounded in the Champagne offensive.

DISCOMFORTS OF THE SOMME

Before its arrival in the Somme, the Escadrille had always been quartered in towns, and the life of the pilots was all that could be desired in the way of comforts. We had, as a result, come to believe that we would wage only a *de luxe* war, and were unprepared for any other sort of campaign. The introduction to the Somme was a rude awakening. Instead of being quartered in a villa or hotel, the pilots were directed to a portable barracks newly erected in a sea of mud. It was set in a cluster of similar barns about nine miles from the nearest town. A sieve was a water-tight compartment in comparison with that elongated shed. The damp cold penetrated through every crack, chilling one to the bone. There were no blankets and, until they were procured, the pilots had to curl up in their flying clothes. There were no arrangements for cooking, and the Americans depended on the other escadrilles for food. Eight fighting units were located at the same field, and our ever-generous French comrades saw to it that no one went hungry. The thick mist, for which the Somme is famous, hung like a pall

over the birdmen's nest, dampening both the clothes and spirits of the men.

Something had to be done, so Thaw and Masson, who is our *chef de popote* (president of the mess), obtained permission to go to Paris in one of our light trucks. They returned with cooking utensils, a stove, and other necessary things. All hands set to work and as a result life was made bearable. In fact, I was surprised to find the quarters as good as they were when I rejoined the Escadrille a couple of weeks after its arrival in the Somme. Outside of the cold, mud, and dampness, it wasn't so bad. The barracks had been partitioned off into little rooms, leaving a large space for a dining-hall. The stove is set up there and all animate life, from the lion cub to the pilots, centres around its warming glow.

The eight escadrilles of fighting machines form a rather interesting colony. The large canvas hangars are surrounded by the house tents of their respective escadrilles; wooden barracks for the men and pilots are in close proximity, and sandwiched in between the encampments of the various units are the tents where the commanding officers hold forth. In addition there is a bath house, where one may go and freeze while a tiny stream of hot water trickles down one's shivering form. Another shack houses the power plant which generates electric light for the tents and barracks, and in one very popular canvas is located the community bar, the profits from which go to the Red Cross.

We had never before been grouped with as many other fighting escadrilles, nor at a field so near the front. We sensed the war to better advantage than at Luxeuil or Bar-le-Duc. When there is activity on the lines, the rumble of heavy artillery reaches us in a heavy volume of sound. From the field one can see the line of sausage-shaped observation balloons, which delineate the front, and beyond them the high-flying airplanes, darting like swallows in the shrapnel puffs of anti-aircraft fire. The roar of motors that are being tested is punctuated by the staccato barking of machine guns, and at intervals the hollow whistling sound of a fast 'plane diving to earth is added to this symphony of war notes.

THE WAR IN THE MIDDLE WEST

THE LETHARGIC STATE OF MIND OF THE AMERICAN PEOPLE TOWARD THE WAR WHEN
THE GERMAN THREAT CAME

BY

EDWARD G. LOWRY

AN INCURABLY civilian people brought face to face with war is always a profoundly appealing and moving spectacle. Sometimes it fills the ardent patriot with misgivings and apprehensions that prove to be groundless. To one who was privileged to observe them both at close range, the public state of mind in the United States in the critical days at the beginning of last month when we broke off diplomatic relations with Germany and dismissed her Ambassador and the public state of mind of Great Britain at the beginning of August, 1914, were strikingly alike. Both democracies were unprepared for war; mentally unprepared and materially unprepared. There was no "war spirit" in either country and no desire for war. There was no lust for conquest.

One was as conscious in England, in 1914, of the reluctant gravity to face the plunge into battle as in the United States in 1917. Any English statesman might have said then, voicing the collective aspirations of Great Britain, what President Wilson said so simply and lucidly when he told the Congress that Count von Bernstorff had been given his passports: ". . . We purpose nothing more than the reasonable defense of the undoubted rights of our people. We wish to serve no selfish ends. We seek merely to stand true alike in thought and action to the immemorial principles of our people . . . seek merely to vindicate our right to liberty and justice and an unmolested life." That one thought and ideal brought the two great English-speaking countries to face war with clean hands and hearts against the hostile and aggressive Germanic tribes.

The people didn't want to fight if they

could get out of it. But here as well as there they were ready to follow their chosen and elected leaders. The story runs that at noon on the day England declared war against Germany the French Ambassador at London sent a messenger to the President of France confessing that he did not know and could not discover what course England had in mind to pursue; whether she would meet her obligations and enter the war or whether she would stay out of it and "trade with both sides," as the great organ of the Liberal Party, the *Daily News*, urged on the very eve of the decision. But the Government declared for war and for righteousness, and the people followed the lead given them.

Every discerning person who was in Great Britain at that time knows that had the question of going to war or staying out of it been left to a popular vote the masses of the people in England would have been on the side of peace—and ultimate ruin. I venture to believe that the same thing might have been said of us on February 1st. With the enemy at their gates and separated from them by only a narrow strip of water, the English people in the beginning, as a whole, did not "realize" the war. They were not conscious of their obligations. They did not know that their institutions were menaced. Even after the war began it was the grievous experience of speakers at recruiting meetings to be told by workingmen in the Midlands that it did not matter if the Germans did come and take the country. "Our wages will go on just the same," they said. England was slow to awake, just as the United States has been slow to awake to our relations to the war in Europe.

In England the working class, the miners, the trade unionists, the factory

operatives held off from the war a long time. They were slow to adjust themselves to a new situation. They proved to have little imagination and small capacity for the rapid assimilation of ideas. While quicker and more active minds were re-drawing the map of Europe or discussing the terms to be imposed upon Germany the great mass of the people of England were still asking themselves whether the country ought to be at war at all. Like ourselves, they had been living in a secure and fortunate position in the world in which war had no place, and it cost them a great spiritual effort to abandon the hopes of their dreams and to meet the German on his own terms of blood and brutal conflict. It was not really until the sinking of the *Lusitania* and the first gas attack at Ypres that the last doubts as to the causes at stake were dispelled. They were accustomed to thinking of soldiers and citizens as two different species. We have been even slower in coming to the realization that every able-bodied man owes a soldier's duties to the State and should be prepared physically and by education to render them. We were all brought sharply face to face with that fact when we broke off with Germany because of her uncivilized and barbarous practices on the seas.

Kitchener's army was the first outward and visible testimony that the people of England had gone to the war. Once they had accepted the war and had realized its full meaning to them, they accepted other things that had been unthinkable to them; compulsory military service, compulsory labor in the workshops, an increase of power to the Executive that rendered strikes impossible and put every adult male in the State at the service of the State on terms fixed by the State. Before this came about and before the people of the nation as a whole went to war there had been strikes at the shipyards on the Clyde, in the Welsh mines that supplied the Navy with coal, and in the plants and factories that made articles absolutely essential to the conduct of the war. With the complete realization of the German menace there came the present condition in England and a cheerful giving of every ounce of man-power, every resource, and every

drop of energy to the successful prosecution of the war.

England's awakening came only through experience; as ours must come. The men in Devonshire and Cornwall and Yorkshire and in the manufacturing counties in the Midlands who said in the beginning: "If the Government wants me it will come and get me. I don't know anything about this war for foreigners," were only saying what our own people in the Middle West and the intermountain states have been saying. Britons learned in Belgium, in Flanders, in France what the German was and what he does when he sets upon a peaceful world with arms in his hands. They saw the brutalities on land which, repeated again and again at sea to our women and children, finally wore through our deep patience and brought us to the present position. I choose to insist at this juncture on this analogy of a lethargic England and an unroused America faced with the aggression of a powerful and unscrupulous foe.

HOW ENGLAND AWOKES

Consider the steps that were taken:

The British Government declared war. The British army of professional soldiers, quite apart from the people, who at the time regarded "military men as belonging to a profession which may be useful but is often dangerous," was sent to France and was destroyed. Then came the call for men to take the places of those who had been killed. By coaxing, by exhorting, by all manner of advertising, by social pressure, men were found. That was Kitchener's army. More and more men were needed. The timorous politicians were afraid of compulsory service (as they are with us). But now the people had come to see the enemy in his true colors and it was pressure from the people on Parliament that brought about the National Service Act. I stress this revolution in public sentiment for the light it throws on conditions easily visible in this country so recently as two months ago. England came to war reluctantly, not clearly understanding the vital import to her of the issues and, for a time, with fewer fighting men in the field than any

other belligerent. She was as unprepared for war mentally and materially as we were when the dramatic break with Germany was thrust upon us. She has become the most powerful of all the fighting nations and the very keystone of the arch of the Allies. It is a process of evolution that we might well study. I set down here the tale of what I saw and heard through this country two months ago simply to compare it with Great Britain of thirty months ago and the Great Britain of to-day. We must prepare to follow the same path.

AMERICA'S ATTITUDE TOWARD THE WAR

I witnessed this transformation in England and saw all the slow and apparently erratic processes through which a modern democracy rouses itself to fight for even so vital a thing as its own preservation. I came home at the end of last year to discover something about my own country, and found the ardent Eastern seaboard despairing of the Republic. I sought to discover how the United States had been affected by the war; what was her attitude toward it, and what part she proposed for herself in the readjustments and reorganization that must follow the end of hostilities, if in the meantime she had not been drawn into it as an actual participant. I found a state of mind that was familiar. It was unawakened. It was the state of mind of England of August, 1914. President Wilson had just been reelected. I found he had the country behind him to a degree apparently unsuspected in New York and along the Eastern seaboard. The country as a whole was uninformed about our foreign relations. The attitude of the people in effect was: "The President has information that we can't have. He knows more than we do about these things. I guess we can leave it to him whether we ought to get into this war." I made a slow, zigzag journey out to the Pacific Coast and back going through Ohio, Indiana, Illinois, Wisconsin, Minnesota, Nebraska, Wyoming, Utah, Nevada, and California, and returning through Arizona, New Mexico, Colorado, Kansas, and Missouri.

In Ohio, at the gateway of the Middle West, I found, as in the South and along

the Western seaboard, no decided drifts or tendencies among the people. Their election of Mr. Wilson had conveyed no mandate to him. They were not expecting him to do anything particularly. They were content to be out of the war, peaceably attending to their own engrossing affairs. They had no fault to find with present conditions. There were no incentives urging them to a change. They felt secure. The future seemed to them assured. The war seemed a long way off and they hoped it would stay there. The barbaric German intentions toward our sea traffic was unsuspected. The conflict abroad had not touched their imagination, except in so far as it had made them appreciate the blessed state of peace in which they were enveloped. The earth had produced bounteous harvests; the mills and the factories were all working overtime and paying good wages.

THE SENTIMENT OF THE MIDDLE WEST

In considering the attitude of the United States on any national policy or national problem, it is highly important to know what the Middle West thinks. On domestic problems and in domestic affairs, this section has thought sanely and to the advantage of the country as a whole.

It has not attacked the European problem so resolutely nor with as much insight, sympathy, and understanding as it has shown in considering internal problems. So far as one could judge, after traveling through the states of the Middle West and coming into contact with many types, these people had clearly made up their minds that they did not want to have anything to do with this war except under extreme provocation. For one thing, and this is typical, and one of the minor contributory causes, they were rather suspicious of the strong pro-Ally tendency shown by New York and the East. Generally they view with some apprehension the attitude that is taken by New York and the Eastern States which involves the other parts of the country. For the Eastern States, be it known, are the home of plutocracy, and, so far as the West and the Middle West are concerned, the plutocrat is always fair game.

One very intelligent publicist with whom I talked had voted for Mr. Wilson reluctantly, after long delay in making up his mind, because he thought on the whole that the President had done fairly well, and at any rate promised better than Mr. Hughes. He didn't pretend to be enthusiastic about Mr. Wilson, but was glad, in common with every one else, that the United States had kept out of war. He thought Mr. Wilson had maintained peace with honor, on the whole. He didn't think the United States was prepared to pay too high a price to keep out of the war. If direct attacks were made on American ships, the United States would and should participate in hostilities. That is the dominant and underlying sentiment the country may count upon. It is the "silent strength" inherent in the Republic; men who do not talk war, who do not want war, who will endure much before going to war, but who have never failed to fight when the time came "to vindicate our right to liberty and justice and an unmolested life." My informant strongly expressed his belief that there was no present sentiment in the Middle West for any alliance or agreement after the war, political or commercial, with Great Britain or any European belligerent. The sentiment of the Middle West was all in favor of continued isolation of the United States from European affairs. He added that the whole actual aspect of the war and its meaning were so remote as entirely to elude the imagination and grasp of the Middle Western country. This was precisely the state of mind and condition in the provinces of England even after the war had been in progress for a month and the newspapers were filled with the exploits and trials of the First British Expeditionary Force on the heroic retreat from Mons. The average man of his acquaintance, he said, could not see how the war affected him, or feel in any sense it was his war. He simply didn't understand in the least that the people in Great Britain and France meant what they said when they said they were "fighting the battles of the United States." Through the people of this part of the country there runs a strong strain of idealism. They want to make the world a

better place to live in. They seek to build good houses for themselves and schools for their children. They want to be friends with their neighbors. They are peaceful. The aggressive peace propaganda which has been conducted in the United States for the past half dozen years has fallen on fertile ground. I venture to believe that their desire to keep out of war was not due to materialism, cowardice, sloth, or any mean and unworthy motive, but to this idealism and good will and neighborliness toward the whole world. To these people the war in December was a bad dream. In February they faced it with open, unafraid eyes, and without dismay, as an actuality. They were slow to understand that this is a real and terrible world and that a nation's character is formed as a man's character, through contact and conflict with the world's rough hand.

THE "PEACE AT ANY PRICE" GROUP

There were very few "peace at any price and at all hazards" men to be found. They were in distinct little groups. But the average run of people whom one encountered were inclined in the same general direction without going so far. Their hearts inclined toward peace and they saw no reason why the United States should become a belligerent. They would fight if the reason were made plain to them why they should and if they felt that the country's rights were affected. It was easy to find, however, in casual conversation, plenty of men who were of the belief that American citizens should not travel on any of the ships of the belligerents. These little "peace at any price" groups, without influence and in no way reflecting representative public opinion, are not a phenomena peculiar to the United States.

I sought some explanation of the prevailing state of mind, of the clear unwillingness to participate in any phase of the European struggle; of the marked eagerness shown to remain aloof and detached from the great emotional experience. One of my rewards in this quest was this from a man in Chicago who knows Europe, who is strongly pro-Ally, and has been in France and England since the war began: "Peace, prosperity, and isolation are

the narcotics that have been dulling the national will and consciousness. Prosperity is an insidious foe to thought of participation in a war or even to an active interest in the welfare of either of the belligerents. Prosperity means a lot of business and interesting business, too, to absorb one's time. It is next to impossible for the average man with engrossing business affairs, and virtually every man in the United States has business affairs, to get wrought up by things so far away from him as the European War, while every day there are being offered to him attractive opportunities to pour money into his lap. Business is absorbing all his energies and attention.

LEAVING IT TO THE ADMINISTRATION

"The small man is waiting for a lead from the National Administration. We know out here that in the East business men and publicists are thinking about the future; that they are thinking about future relations between Great Britain and the Allies and ourselves. They assume that President Wilson is thinking of the same thing and that when the time comes he will suggest a course to the country. They remember Mr. Wilson's speeches toward the close of the campaign. They remember particularly that he said that this is the last great war in which the United States could be neutral. They rather look to him to define and propose a policy for the participation of the United States in world affairs.

"I think you will find that it would be rather a wrench to many of them to abandon our traditional policy of isolation. But so far as I can make out, the whole country is in a state of mind where it is waiting to be led in one direction or another. It knows that something is going to happen to it after the war, surely, and that the Germans may even force us in as a belligerent, but it does not know what will happen and whether it will be to its advantage or to its disadvantage."

I present this point of view to accentuate the analogy that is being drawn. The pointed comment is merely to recall what seems so grotesque at this moment, that Great Britain's spontaneously formulated

national slogan as she entered thirty-one months ago the greatest and most desperately contested war the world has ever known was, "Business as Usual." The daily walk and the habits of mind of peace are not cast off in an instant by any peace-loving democracy.

In northern Illinois about Chicago and in Wisconsin and in Indiana one found, clearly voiced, the same sentiments that had been heard farther east. In effect, a strong desire for peace, no desire to fight unless and until actually attacked; no validity attached to talk that "the Allies are fighting our battles;" no understanding of the war or comprehension that the people of the United States have any share or interest in the present issues that are being decided by force of arms on the continent of Europe. This latter was not only the majority of sentiment, I believe, but it was the virtually unanimous belief then.

AMERICA AROUSED

The great bulk of these people did not view the war as any more intimately affecting them than a new sun spot or a flood in China. The loss of life and the destruction of organized society had touched their sympathy but not their imagination. The great body of them had never seen an ocean and had no knowledge, comprehension, or faint conception of maritime power or interest. The rights of neutrals at sea was then but a vague academic concept. They expressed themselves as prepared to support the President and the National Administration in whatever might be conceived to be the right thing for the country to do. I do not believe they were sunk in sloth or materialism, but simply that they did not understand, even vaguely, that the United States had any duties to be fulfilled. They were pleased to think of themselves as the guardians of the rights of mankind and the keepers of the light of civilization, but I suspect that in their own minds they were not then fully prepared to incur the responsibilities and obligations that would necessarily attend such a guardianship. It needed the dramatic and eventful days at the beginning of February and the moving events that have followed in their train to

disturb and arouse this condition of mind; to bring things home to this section of the country. What seemed far away and unrelated has been brought into direct contact. When the German ships bombarded Scarborough and Whitby thousands in England realized for the first time that their country was in danger and that their troops across the Channel were not giving up their lives solely for "foreigners."

Perhaps nowhere on the habitable globe were the reverberations of the great war in Europe fainter or less heeded than in the so-called intermountain states. It seems incredible that anywhere there should exist so great a community of intelligent human beings who could care so little and know so little of a moving event.

Coming up on the train from Lincoln to Omaha, I asked, in desperate quest for a contact, of a casual seat acquaintance: "Aren't you interested in any aspect of the war?"

"Sure we are," was his ready reply, "we are interested in the high prices and how long they are going to keep up. This war has been a great thing for our part of the country."

Another person from whom I sought information, a university professor, presented the obverse of this angle of vision. "I think," he said, "that our people have just begun to get indignant about the war because the high cost of living has forced its meaning home to them. The prices they are having to pay for the necessities of life have brought them to their first realization of what war means and brought them into a state of indignation against the mere fact of war and consequently made them hate it."

Now, these are only two actual viewpoints taken at first hand. One does not pretend to say how widespread they were, but they show, more vividly perhaps than any other examples that could be cited, how far removed the whole meaning of the war was from this part of the United States before the period of declared "ruthlessness" at sea.

Any survey of the state of mind in the United States prior to the dismissal of Count Bernstorff would be incomplete that

did not take note of a curious suppression of sentiment that one encountered in widely unrelated quarters. This country bears, I think, and certainly cherishes, the reputation of being one of the most outspoken countries in the world. Free discussion and freedom of opinion are supposed to be birthrights. Yet on the Pacific Coast by a happy chance I met a man, distinguished in his own field at home and abroad, who suddenly in his own library burst out with the confession that he had been suffering under an internal suppression of wrath against the Germans ever since the war began. I ventured to ask him why he had suppressed his feelings, why he had not spoken out, and to my astonishment he was puzzled and taken aback by the inquiry. He did not know. A convention, he said vaguely, had been laid upon everybody not to talk about or show any feelings about the war. By whom? one asked. He didn't know but was sure everybody felt the ban. This was corroborated by the others.

I, too, had noticed this singular phenomenon in making my zigzag journey across the continent from New York. Men, in speaking strongly about the war and their sympathies, unconsciously lowered their voices. Some looked about them warily and even furtively if they were in public where they might be overheard.

One does not pretend to explain this curious and puzzling condition, but it existed. It may have been due to a lack of intellectual leadership; it may have been due to the unsettled and undetermined state of mind in which the whole country was at that time. This lack of drift or tendency of national popular opinion in any direction might be ascribed to the widespread general ignorance of foreign affairs and foreign relations and a natural diffidence on the part of men to speak out until certain national leaders of popular and public opinion have spoken.

Well, at any rate, that day is over. We are not bound by any conventions. We are free to say what we feel and think. The straight road, the road we have always traveled, lies open before us. Let us see what is over the hill.

PREPAREDNESS ON LAND AND SEA

THE NUMBER OF MEN AND SHIPS WE HAVE READY FOR WAR—WHAT HAS BEEN ADDED
IN THE LAST TWO YEARS—SUBMARINES, DESTROYERS, AND AIRCRAFT
—UNIVERSAL SERVICE IN THE LIGHT OF WAR

THE naval appropriation bill of August 29, 1916, was the first big official step taken since the war began in response to the movement for adequate national preparedness. It authorized the construction of 156 new vessels for the Navy, appropriated approximately half a billion dollars to start the work, and committed the Nation to a total expenditure of more than one billion dollars for the Navy alone. By the year 1921, this may give us a handsome fleet: it helps but little to-day.

That bill *authorized* the Navy Department to *begin constructing*, within the years 1917, 1918, and 1919, these ships:

- 10 battleships
- 6 battle cruisers
- 10 scout cruisers
- 50 destroyers,
- 9 fleet submarines
- 55 coast submarines
- 3 larger coast submarines
- 3 fuel ships
- 1 repair ship
- 1 transport
- 1 hospital ship
- 2 destroyer tenders
- 1 submarine tender
- 2 ammunition ships
- 2 gunboats

That bill *directed* the Navy Department, during September, October, November, and December, 1916, and January and February, 1917, to *begin constructing* the following of the foregoing ships:

- 4 battleships
- 4 battle cruisers
- 4 scout cruisers
- 20 destroyers
- 27 coast submarines
- 3 larger coast submarines

- 1 fuel ship
- 1 ammunition ship
- 1 hospital ship
- 1 gunboat

The day the naval appropriation bill was signed, navy yards at Boston, Philadelphia, and Charleston were directed to *begin constructing* the fuel ship, the hospital ship, and the gunboat; and bids were asked from the private shipbuilding yards for the battleships, scout cruisers, destroyers, and submarines. All bids were in by November 1st, and "after prolonged negotiations" concerning electric drive propulsion, contracts were let so that the builders could *begin constructing* the following battleships: *Maryland, West Virginia, Colorado, and Washington*—ultra-modern superdreadnaughts, of less speed but greater power than even the big British creations like the *Queen Elizabeth*, displacing 32,600 tons apiece against 27,500 tons, and mounting 16-inch guns against the British 15-inch guns.

The words *begin constructing* have been emphasized throughout because many people unconsciously confuse ships "authorized" with ships armed and ready to put to sea. As a matter of fact, most "authorized" ships do not exist even on paper in the form of plans. Indeed, to designate a ship as "authorized" means that it is not built. The earliest date at which delivery of any of these "authorized" big ships is promised is thirty-nine months hence; and corresponding periods must elapse before the smaller boats can be delivered. This despite the offer of Congress of a 20 per cent. bonus for extra haste in completing the dreadnaughts—an offer that was not accepted because the builders could not turn them out sooner, on account of pressure of

other work, shortage of labor, and shortage of materials. These will be magnificent ships when we get them—probably two years after the war is ended.

Next, the battle cruisers—the swift, heavily armed but lightly armored ships with which Admiral Beatty gave so good an account of himself at Jutland. Congress directed that four of them be begun forthwith. Contracts for them have not yet been let. They are so long that neither the Federal Government nor private companies have ways long enough to build them on (our biggest dreadnaught, the *Pennsylvania*, is 600 feet long, while the projected battle cruisers are 850 feet long); and to equip the most promising navy yard for the purpose (Philadelphia) will require more than one year of work before the men could *begin constructing* the battle cruisers. They would then require nearly as much time in building as the battleships. To date, no progress has been made toward doing anything about building them at all.

CONSTRUCTION CONTRACTS

Destroyers—the “fringes of the fleet,” the swiftest of war boats, scouts, and bearers of news, arch enemies of submarines in battle. Congress called for twenty to be begun at once. Contracts have been let to build them at Bath, Fore River, Union Iron Works, and Mare Island—earliest delivery promised, twenty-two months.

Scout cruisers—big brothers of the destroyers. Congress called for four, the biggest and fastest ever planned for any navy. Congress guessed wrong on the probable cost, so, contract for only one has been let: the Seattle Construction & Dry Dock Company promises delivery of that one “within three years.” New bids for the other three were opened in January.

Submarines—the American invention which went to Germany for its greatest development and most vicious use. Congress directed the immediate construction of twenty-seven. “After weeks spent in reaching an agreement with the builders,” says Mr. Daniels said, eighteen were awarded to the Electric Boat Company,

six to the Lake Torpedo Boat Company, and three to the California Shipbuilding Company. Date of delivery not disclosed, but average time required to build in the past—two years.

THE GREAT LOSS OF TIME

So much for the great navy we are to have, some day. To be sure, construction on these ships can be hastened in this emergency; but the utmost haste that can now be made cannot produce these vessels *now*—which is when they are needed—nor many of them within a year from now. Two years were lost while the Administration and Congress sat by and watched a world at war, fondly imagining that endless miracles would save us from being drawn into the maelstrom.

All these plans prepared us for 1921, not for the fateful February 1, 1917, when President Wilson was forced to ask Congress to confront an open break with Germany. How much stronger was the Navy on that dramatic date than it was on that July 31, 1914, in Europe which should instantly have warned our Government to bend every energy to prepare our arms for use? Facing the second naval Power of the world, how much stronger are we to-day, not in plans and appropriations, but in seaworthy ships upon the sea?

What, then, of the fleet we actually have, compared with the fleet we had when the war began? How much has our danger caused us to hasten the work upon ships under construction in 1914 and 1915? The situation of our effective fleet on July 1, 1914, and to-day follows:

UNITED STATES WARSHIPS IN COMMISSION

	1914	TO-DAY
Dreadnaughts.....	8	12
Battle cruisers.....	0	0
Pre-dreadnaught battleships..	22	21
Cruisers (all other types) ...	25	33
Destroyers	51	49
Submarines.....	30	42

Under modern conditions, the only ships, of the foregoing, that can fight effectively in decisive battles are the dreadnaughts

U. S. DREADNAUGHTS NOW IN COMMISSION

NAME AND OFFICIAL NUMBER	COMMISSIONED	TONNAGE	SPEED KNOTS	MAIN GUNS	
				NO.	CALIBRE
1. Michigan (27)	Jan. 4, 1910	17,617	18½	8	12 in
2. South Carolina (26)	Mar. 1, 1910	17,617	18½	8	12 "
3. Delaware (28)	April 4, 1910	22,060	21½	10	12 "
4. North Dakota (29)	Apr. 11, 1910	22,060	21	10	12 "
5. Florida (30)	Sept. 15, 1911	23,033	22	10	12 "
6. Utah (31)	Aug. 31, 1911	23,033	21	10	12 "
7. Wyoming (32)	Sept. 25, 1912	27,243	21½	12	12 "
8. Arkansas (33)	Sept. 17, 1912	27,243	21	12	12 "
9. New York (34)	Apr. 15, 1914	28,367	21½	10	14 "
10. Texas (35)	Mar. 12, 1914	28,367	21	10	14 "
11. Nevada (36)	Mar. 11, 1916	28,400	20½	10	14 "
12. Oklahoma (37)	May 2, 1916	28,400	20½	10	14 "
13. Pennsylvania (38)	June 12, 1916	32,567	21	12	14 "
14. Arizona (39)	Oct. 17, 1916	32,567	21	12	14 "

and battle cruisers. Other ships (pre-dreadnaughts, cruisers, destroyers, and submarines) have their uses, but conquest of the sea is determined by the big fighters. The Battle of Jutland demonstrated this conclusively. As we have no battle cruisers built and none building, our strength in ships of this class lies wholly in our dreadnaughts. A table of them is at the top of this page.

In other words, to date we have in commission at best 14 capital ships, of total fighting value (after the "Jane method" of calculation) of 124 units. Before the beginning of 1916, Germany had completed corresponding capital ships, 21 in number, of total fighting value, figured on the same basis, of 189 units. As a matter of fact, the *Michigan* and *South Carolina* are so light, so slow, and so weak

in gunpower that they are now ranked as second-line ships by Secretary Daniels—leaving us really only 12 capital ships in commission.

The table, "Dreadnaughts Building" reveals our small hopes of adding these ships to our fleet quickly enough to be of use in this war. Comment on this table is almost superfluous. Theoretically, here are fifteen additional first-line ships. Practically, only three of them can soon be finished [they will be finished this summer]; and these were all authorized before the Great War began. The two dreadnaughts which Congress did authorize since the war began—the *Tennessee* and *California*—though authorized nearly two years ago, are practically not started yet. Secretary Daniels has given explanations for this incredible delay (he has wanted to build

U. S. DREADNAUGHTS BUILDING

NAME AND OFFICIAL NUMBER	DATE AUTHORIZED	PER CENT. COM- PLETED NOV. 1, 1916	TONNAGE	EST. SPEED KNOTS	MAIN GUNS	
					NO.	CALIBRE
1. New Mexico (40)	June 30, 1914	52.0	33,000	21	12	14 in.
2. Mississippi (41)	June 30, 1914	50.6	33,000	21	12	14 "
3. Idaho (42)	June 30, 1914	65.5	33,000	21	12	14 "
4. Tennessee (43)	Mar. 3, 1915	1.4	32,984	21	12	14 "
5. California (44)	Mar. 3, 1915	6.1	32,984	21	12	14 "
6. Colorado (45)	Aug. 29, 1916	0.0		21	8	16 "
7. Maryland (46)	" " "	0.0		21	8	16 "
8. Washington (47)	" " "	0.0		21	8	16 "
9. West Virginia (48)	" " "	0.0		21	8	16 "
10. (49)	" " "	0.0				
11. (50)	" " "	0.0				
12. (51)	" " "	0.0				
13. (52)	" " "	0.0				
14. (53)	" " "	0.0				
15. (54)	" " "	0.0				

them in navy yards, to keep the "munition makers" from alleged enormous profits, and whatnot), but the bald facts remain that it was his duty to get them built—doubly his duty in these months of national peril—and they are not fairly started yet.

What of our submarines? When the Great War broke out, we had 31 submarines in commission, and we have since put into commission 13 more. All these latter, however, were authorized and under way before the war. Two older boats have since been lost: the *F-4* by a gas explosion in Honolulu Bay and the *H-3* off Eureka, California, in a storm—leaving a net addition of 11 submarines to-day over July 1, 1914. This really should be reduced to 7, for though the Government two years ago took over the *G-2* and *G-3* from the builders, for reasons unexplained it has not accepted them; and testifying before the House Committee on Naval Affairs last November, Admiral William S. Benson said the *G-1*, *G-2*, and *G-4* were not in satisfactory condition, though "if we had war, we would fit them out as well as we could and send them out and take a chance with them." Of the 44 submarines then in commission, Admiral Benson testified that only 24 were in active service; 12 were undergoing repairs of machinery or batteries. The remaining 8 boats were the 4 unsatisfactory *G*-boats, 3 *F*-boats at Mare Island to receive new engines, and the *E-2*, replacing with new batteries the ones that caused the explosion in the Brooklyn Navy Yard on January 15, 1916. Of the 36 submarines then capable of service, 10 were with the Atlantic fleet, 3 *H*-boats were on the Pacific Coast, 4 *K*-boats were at Honolulu, 9 were in the Philippines, 5 were at the Isthmus of Panama. The rest were on the Atlantic Coast—not with the Atlantic fleet.

Admiral Benson further testified that twenty-four additional submarines should be delivered in 1917. He did not specify the types, but according to a public document of the Navy Department these are probably the overdue *L-5*, *L-6*, *L-7*, *L-8*, *M-1*, *O-1*, and *O-2*, and the *N*-boats (1 to 7), *Number 60*, *Number 61*, and the *O*-series (3 to 15).

All our recent submarines have been of the so-called "coast" type. These are boats of 450 to 600 tons surface displacement, making from 10 to 15 knots when running on the surface, carrying 18-inch torpedoes, and having a cruising radius of only about 1,500 miles, so that they must rely on home bases and hence are useful only for defense against attacks on our coasts. The one exception is the *Schley*, building at Fore River since March, 1915, and to be delivered in March, 1918, for which practically 50 per cent. of the work on the engines and machinery is completed. This is a boat of 1,100 tons displacement (the *U-53* is 800 tons and the submersible freighter *Deutschland* is 1,700 tons), capable of making 18 knots on the surface. This is our sole experiment in the so-called "fleet" type of submarine; that is, a submarine fast enough to keep up with a dreadnaught fleet and of sufficient cruising radius to be able to cross the Atlantic and return without replenishing supplies. Congress "authorized" 9 fleet submarines last August, along with an "authorization" of 55 coast submarines and 3 larger ("800-ton") coast submarines—but again the reader must be warned not to confuse "authorized" ships with ships ready for use or soon to be ready for use. Even the *Schley*, begun two years ago, is now only half built.

DEFENSE AGAINST SUBMARINES

What of defenses against submarines? Practically nothing has been done since 1914. These defenses are chiefly destroyers and fast motor boats, airplanes, and dirigibles, nets, and booms. We have to-day 2 less destroyers in commission than we had in 1914, or 49 in all—just about enough to scout with our battle fleet. Three more can be finished this year. We have 16 old-type torpedo boats, of 28 to 29½ knots speed and limited cruising radius, that might be pressed into this service.

We have roughly 10,000 motor boats in the country, privately owned, few of them heavy enough to mount the necessary 3-inch guns or to ram submarines; few crews that have been trained to take the risks required in fighting under-water



THE MILITARY HOPE OF THE NATION

This map shows the number of physically able men between the ages of 18 and 32 in every state, based on the census of 1910. The total is 9,197,226. If the military age be extended to 45, the number, of course, would be much larger. From this group, however, any conscript American army would first be taken. To organize, equip, train, and officer such a body of men is a task about twice as great as that which Great Britain, by herculean efforts, took two years to accomplish. At the most, probably only one million men could be put into the field in the first year.

craft. Of aircraft for naval use we have 19 airplanes in actual use, 77 contracted for and not delivered [but trained men for only 40], three kite balloons, and one dirigible—not enough for the fleet, let alone coast defense. Of nets and booms we have exactly none. When we broke with Germany we had nothing in our possession to prevent a German submarine coming into New York harbor on a favorable night, crippling the Brooklyn Navy Yard, sinking a lot of ships in places to block navigation, and, unless cut off by destroyers, putting out to sea unharmed.

THE SHORTAGE OF MEN

What of the officers and men? Admiral Benson testified recently that he would have several ships now, tied to docks ready for service, if he could get the men. They could not be got. Why should they join the Navy, so long as service there is on purely a business basis, when they can make more in private shops?

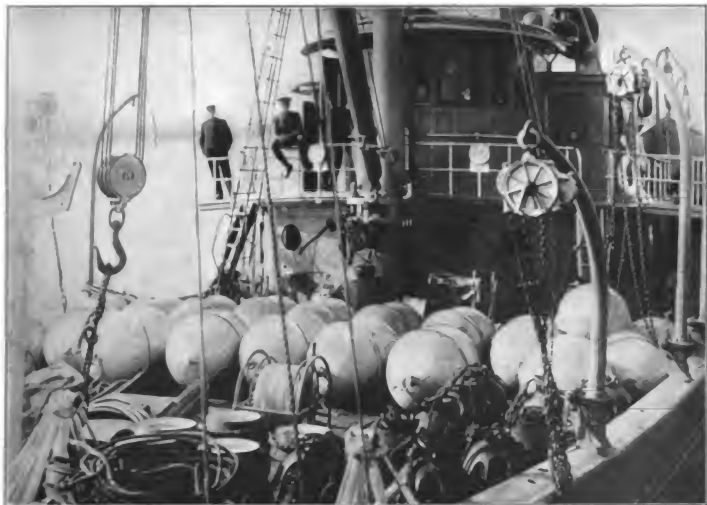
The tale of our preparedness on land can be briefly told. Our trained Army consists of 108,000 regulars, of whom 71,000 are stationed in the United States while the rest guard our outlying possessions; and 156,000 National Guardsmen who answered the call and were accepted for service on the Mexican border. [The President's call of June 8, 1916, was for the "war strength" of the National Guard, or 267,000 men.] These men have uniforms and small arms, but they have nothing like an adequate equipment of field artillery, siege guns, and machine guns. Great Britain, whose case is most like ours, has five million men under arms and trained. The artillery we need may be guessed by recalling that one million shells are sometimes used in one day to prepare the way for one infantry attack on a front of three miles. The necessary number of machine guns may be imagined from the fact that the French and English have one for every, say, 200 feet of front

from Switzerland to the North Sea (and machine guns cost \$1,000 apiece).

The army reorganization act of Congress called for an addition of about 20,000 men to the standing army. Several months of recruiting have produced only about 5,000 of that number. The men can make more money in other ways.

a year more. Of medium and heavy artillery we should probably be able to acquire a supply from Bethlehem, thanks again to European war orders, but we have no troops trained to handle them.

Our coast defenses, the batteries that guard our harbors, are adequately manned so far as the Regular Army is concerned,



A NAVAL MINE LAYER

We have, to be sure, 10,000,000 men of military age to draw upon. So has Russia—and more—and hers are partly trained men where ours are not; but even to-day in Russia regiments go into battle with one rifle for every four men. As rifle-bearers fall, their guns are picked up by the unarmed and carried on into the charge. We should be in a worse case. Our rifle factories do, indeed, now make perhaps 2 million rifles a year, thanks to Russian and French orders. These we might commandeer. But we should simply be robbing those nations which need them and which have men trained to use them. Our Government has, of our rifles, using our ammunition, about 700,000 pieces, and facilities for making 300,000

but our system has called for the militia to supply half the needed men for this service, and it has fallen far below doing it. It is undermanned about 25 per cent., according to General Hugh L. Scott, Chief of Staff. He adds that "the increase of armament of certain battleships, by which they carry more powerful, longer range guns than those which have heretofore been installed, has exposed certain cities—harbors of anchorage—to a fire which would not be met successfully by existing fortifications."

The air service, under Brig. Gen. George O. Squier, has made remarkable advances in a short time and with limited resources, but is utterly inadequate to large-scale operations.



OUR DEFENDED PORTS

Supplied with coast defenses against battleships and raiders but undefended against submarine or air attacks. Only after the break with Germany were preparations begun to protect the entrance to our richest harbor, New York, with anti-submarine nets

The most hopeful aspect of our situation is the work of the Advisory Commission of the Council of National Defense. The Council consists of the Secretaries of War, Navy, Commerce, Interior, Agriculture, and Labor. The Advisory Commission consists of "not more than seven persons, each of whom shall have special knowledge of some industry, public utility, or the development of some natural resource." And the sweeping duty imposed on these thirteen men is to "create relations which will render possible in time of need the immediate concentration and utilization of the resources of the Nation." In other words these six Cabinet members are the American war council. They correspond to the war councils in England and France. In their advisory council they have or can get the best brains and ability in the country. They have the power and opportunity and on them is lodged the responsibility of seeing that the vast energies of this nation are honestly and ably and intelligently used. They face the problem of making good the failures of the last three years, for up until now all the evidences of advance

toward preparation for defense are matters of detail—without relation to one another or to an organic whole. Congress awakes to the folly of a prolonged ignoring of the Navy and strives to redeem its mistake by mere hugeness of expenditure. Service on the Mexican border is tried as an experiment to cure a disease that is organic and upon its prompt failure, another nostrum is tried—"Federal pay for the militia." Coast defenses without men, strategic harbors without defense against submarines, soldiers without guns, a Navy without scouts, an attempt to seize control of the air by a fleet of airplanes without aviators, an army without artillery, artillery without ammunition—no proportioning of things to one another, no simple great plan to which details may conform.

Therein lies the failure of our feeble and wayward gropings toward military equipment in the last thirty months. Great Britain has such a simple plan, and it has won the one instant and indisputable vic-



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"THE NARROWS"

Between Fort Wadsworth and Fort Hamilton at the entrance of New York Harbor, which, like our other harbors full of rich shipping, had no special submarine defenses made for it, before the break with Germany



MOTOR BOAT SUBMARINE PATROL

A part of our naval reserve but a type given up by the British as unsuitable for the work

tory of the war. "Control the sea or perish" has sunk into every British mind, and the practical translation of it has been equally simple, and universally grasped by the people—"ours must be a two-Power navy." On that elementary principle the British people have felt safe in trusting expert guidance, in paying whatever was needed, secure in the knowledge

that the investment was the surest and cheapest insurance of security that the nation could possibly make.

Germany had as simple a formula. "We must find our place in the sun" was wrong because it was an offensive and not a defensive creed. But it made easy the task of erecting the amazing monster of Germany in arms, which was a Franken-



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THE BEST SUBMARINE PATROL

We have forty-nine destroyers all of which are needed for service with the battleship fleet



BRIGADIER GENERAL GEORGE O. SQUIER

Chief of the Signal Corps who is in charge of the development of aviation for the Army

stein because of its poisoned philosophy and not because of its efficiency.

France found the name of its creed only at Verdun, but for forty years it had built its defense on the spirit of "They shall not pass."

The phrase will not readily be found for the United States, but it will contain the meaning of "war only for defense of democracy." But it will bring with it the sane, practical knowledge that only two aggressive nations now challenge democracy—Germany and Japan; that, unless we arm, we shall clash with both; that only complete preparation will avail against them; that the only democratic means of military defense of the democratic ideal lies in universal, unpaid military service. Not only is it the only democratic means, it is the *only* means. No defense short of it will defend. Hired armies, half-way armies, are not big enough. Only the nation in arms has a fighting chance against a nation in arms. The United States, so armed, would have no enemy to fear; and, having no imperial

aims to gratify, could sit forever at its own fireside, intent only upon its real mission, which is to work out within its borders a better democracy for its own people.

The founders of our Nation believed that doctrine and wrote it into the first laws of the first Congress. In Senator Root's address before the Congress of Constructive Patriotism held in Washington on January 25th, he quoted this statute. With his prefatory paragraph, it is as follows:

The original theory of our American Government was the theory of universal service. Let me read you how the fathers of the Republic conceived that American independence and American freedom were to be preserved. I read from the Act, the Militia Act of May 8, 1792—and you will perceive here that the Act is based upon the principle of universal compulsory preparation for public defense.

The quaint old phrases of the Militia Act may serve to impress upon your minds the changes of condition to which the principle is to be applied, while they may serve to enforce

the memory of the principle. These are its provisions:

"Every able-bodied male citizen of the respective States, resident therein, who is of the age of eighteen years and under the age of forty-five years, shall be enrolled in the militia. It shall be the duty of every captain or commanding officer of a company to enroll every such citizen residing within the bounds of his company, and all those who may from time to time arrive at the age of eighteen years, or who, being of the age of eighteen years and under the age of forty-five years, come to reside within his bounds.

"Each captain or commanding officer shall without delay notify every such citizen of his enrollment by a proper non-commissioned officer of his company, who may approve the notice, and any notice or warning to a citizen enrolled to attend a company, battalion, or regimental muster which is according to the laws of the State in which it is given, for that purpose shall be deemed a legal notice of his enrollment. Every citizen shall, after notice of his enrollment, be constantly provided with a good musket or firelock of a bore sufficient for balls of the eighteenth part of a pound; a



A NAVAL HYDROAËROPLANE

The Navy has not yet developed either a heavy seaplane or a dirigible suitable for long distance scouting at sea, nor has it sufficient 'planes of any kind to aid materially in submarine patrol work.

sufficient bayonet and belt, two spare flints, and a knapsack, a pouch with a box therein to contain not less than twenty-four cartridges suited to the bore of his musket or firelock, each cartridge to contain a proper quantity of powder and ball; or, with a good rifle, knapsack, shot pouch and powder horn, twenty balls suited to the bore of his rifle, and a quarter of a pound of powder.

"And shall appear armed, accoutred, and provided when called out to exercise or into service." Except only—"Except that when called out on company days to exercise only he may appear without a knapsack.

"And all arms, ammunition and accoutre-



THE NEW ARMY TRIPLANE

A distinct American type that will fly 120 miles an hour, climb ten thousand feet in ten minutes, and which, except for the engine, is considered the equal of the latest type in France or Germany



REAR ADMIRAL WILLIAM S. BENSON

The Chief of Naval Operations of the United States

ments so provided and required shall be held exempt from all suits, distress, executions or sale for debt, or for the payment of taxes.

"Each commissioned officer shall be armed with a sword or hanger, and spontoon.

"The militia of each State shall be arranged into divisions, brigades, regiments, battalions, and companies, as the legislature may direct. It shall be the duty of the Adjutant-General in each State to make return of the militia of the State with their arms, accoutrements, and ammunition, agreeably to the provisions of law, to the President of the United States annually, and on or before the first Monday in January. And it shall be the duty of the Secretary of War from time to time to give such directions to the Adjutant-Generals of the militia as may in his opinion be necessary to produce a uniformity in such returns.

"A system of discipline and field exercise which is ordered to be observed in the different corps of infantry, artillery, and riflemen, of the Regular Army, shall also be observed in such corps respectively of the militia."

The principle of universal service, then, is as old as our government. The forefathers applied it by states where we, under modern conditions, should make it national. But they applied it. That is the point. They, too, feared "militarism." It was rampant in their day. But they knew that universal service, provided the

country be a democracy, is the only safeguard of democracy.

And more recently, President Wilson in speaking to an anti-militarist delegate that visited him more than a year ago explained to them a thing which apparently is much misunderstood in this country.

He defined the difference between militarism and preparedness:

I should say it was not inconsistent with the traditions of the country that the people should know how to take care of themselves; but it is inconsistent with the traditions of the country that their knowledge of arms should be used by a Governmental organization which would make and organize a great army subject to orders, to do what a particular group of men might at the time think it was best to have it do. That is the militarism of Europe, where a few persons can determine what an armed nation is to do. That is what I understand militarism to be.

But a nation acquainted with arms is not a militaristic nation, unless there is somebody who can by an order determine what they shall all do with that force. I think we ought to be very careful not to let these different things seem as if they were the same.

To have militarism, then, you must have



NAVAL BASES ON THE ATLANTIC
At Newport, R. I., Hampton Roads, Va., and
Guantanamo, Cuba



THREE STRATEGIC BASES

(Above) Guantanamo, Cuba, where the fleet holds winter manœuvres. (Centre) The naval training and torpedo station at Newport, R. I. (Below) Hampton Roads, Va., a base for the Atlantic Fleet

the Government in the control of "a few persons who can determine what an armed nation is to do" or "somebody who can by an order determine what they shall all

do with that force." In other words, to have militarism you must have an autocracy, a ruling "few," or an absolute monarchy, a "somebody" who can rule by



AN AMERICAN SUBMARINE

The United States has but one submarine, now building, the *Schley*, of a cruising radius great enough to cross the Atlantic and return

order. In a democracy you cannot have militarism, for in a democracy there is no single ruler and no small ruling group.

There is much reason to think that there are a "few persons" representing industry and the army in such countries as Japan and Germany, who can and do determine what those nations are to do.

In France and Switzerland, on the other hand, the Army has no more control over

the policy of the Government than our Army has over our Government.

Many of our people have thought of militarism and universal service as synonymous, because they often exist side by side. Both are present in the autocracies of Germany and Japan. There is universal service but not militarism in France and Switzerland, and the same would be true in the United States.



"U-53" AT NEWPORT

Copyright by Waterman

Which crossed the Atlantic, visited Newport, R. I., for a few hours and then proceeded to sink enemy merchantmen off our coasts

OUR PAST WITH GERMANY

THE KAISER'S ATTEMPTS TO GET A FOOthOLD ON THE WESTERN HEMISPHERE IN
DEFIANCE OF THE MONROE DOCTRINE—A REVIEW OF THE UNPLEASANT
INCIDENTS RESULTING FROM HIS INCLINATION TO USE THE
MAILED FIST IN DEALING WITH THE UNITED STATES

IN JULY, 1901, as related by Mr. Morton Fullerton in his book "Hesitations," a "small party of French ladies and gentlemen, including the Duc de B——, the Comtesse de S——, Monsieur de Saint-André, Comte de Martimprey, and Comte Gaston de Ségur, were entertained at dinner by William II on board the imperial yacht *Hobenzollern*, then anchored in a Norwegian fiord at Odde. During the evening the Emperor touched agreeably upon a hundred themes. He talked with remarkable frankness, and was particularly interesting and outspoken in conversation with my friend, Monsieur de Saint-André, who has placed his notes of the Emperor's confidences at my disposal. For fifteen years he had refrained from publishing them, although one of the Emperor's guests, Monsieur de Ségur, had published, a short time after the dinner, an article reporting certain of the Emperor's opinions. To-day no consideration of social convention, or of tact, obliges any one of the Emperor's interlocutors to silence, and I am authorized by Monsieur de Saint-André to make whatever use I think best of his report of the Emperor's talk.

Here are the notes verbatim as they were taken down immediately after the conversation:

"The Americans. The vital question for the future of Europe and the world. It takes precedence of all others, leaving in the shadow divergencies that are merely European. Their (the American) interference (*immixtion*) in European affairs is nearer at hand, more menacing, than is generally supposed. The idea of a European *Zollverein* will become imperative: it is to be hoped that this will take place as soon as possible. This is an opinion

which the Emperor declares he has had for some considerable time and he says that the only man who had looked at the matter in the same way in advance was Jules Ferry. . . . The attitude of England towards America. The insistent expressions of her sympathy are especially due to fear. She wishes to arouse difficulties between the United States and the other Powers, so as to avoid having any of her own. The question of the Samoan Islands, which the Emperor is very glad finally to see settled. How difficult it all was, and that he was so mortified at not being able earlier in the day to make his voice more loudly heard. But he could not do so owing to his lack of a naval force. Prince Bismarck has taught him that when you have merely a stick as a weapon you must not attack a man with a gun. Every question or difficulty of a European Power with the United States becomes a European question, a European difficulty, a European interest. The attitude of England, therefore, will have to become clear and frank. She will have to take sides. Anglo-American sympathy; is it sincere? Desirous of finding out, the Emperor at the funeral of "Grandma" (sic) asked a *very considerable personage* for his opinion—he is obliged to withhold the name. To the question thus put the reply was: 'Those who look behind the scenes do not believe in it!' The danger is that there is no counterpoise to the United States in America. His regrets that France, instead of going to Mexico in '66, should not have come materially to the rescue of the Confederate troops. While the struggle between the Northern States and the Southern States is over forever, it might perhaps be possible to look forward to a rivalry, perhaps to a conflict, between

the East and the West, between the agricultural population and the manufacturing population."

The Kaiser also suggested to the French Foreign Office that the United States be isolated by the European Powers. The purpose of this isolation was a test of the Monroe Doctrine. Germany in her efforts to find a place in the sun has tried China, Africa, the Near East, and America.

THE VENEZUELAN CONTROVERSY

While suggesting our isolation to the French—which the French refused to listen to—he was also making the same effort elsewhere.

In "The Life and Letters of John Hay" occurs the following:

"From this time [1900] on, as the Isthmian Canal project came to be a certainty, the Germans redoubled their efforts to get a foothold in the Western Hemisphere and if possible within striking distance of the Canal. In May, 1901, Hay received information that German warships had been inspecting the Santa Margarita Islands, off the coast of Venezuela, with a view to occupying them as a naval base. Later he learned that the Kaiser was secretly negotiating for the purchase of two harbors 'for his own personal use'—whatever that meant—on the desolate coast of Lower California. Both these essays came to nought.

"In the next year, 1902, one of the periodic outbreaks to which Venezuela was addicted gave him an excuse for putting to the test whether or not the United States would defend the Monroe Doctrine by force of arms. The Venezuelans owed the Germans, the English, and the Italians large amounts which they had put off paying until their creditors began to suspect that they never intended to pay at all. The Kaiser apparently counted on the resistance of the Venezuelans to furnish him a pretext for occupying one or more of their seaboard towns. In order to disguise the fact that this was a German undertaking he looked about for accomplices who would give to it an international semblance. It happened, just at that time, that Ger-

many found herself isolated, as France and Russia had renewed their bond of friendship. England, too, always suspicious of Russia, and recently irritated by France, seemed to be looking for a friend. By offers which cannot yet be made public, Germany persuaded the Tory Government to draw closer to her. The immediate result of this adventure in international coquetry was the joint demand of Germany and England on Venezuela to pay them their dues. Venezuela procrastinated.

"The Allies then sent warships and established what they called 'a pacific blockade' on the Venezuelan ports (December 8, 1901). During the following year Secretary Hay tried to persuade the blockaders of the unwisdom of their action. He persistently called their attention to the fact that a 'pacific blockade' was a contradiction in terms and that its enforcement against the rights of neutral nations could not be tolerated. He also urged arbitration. Germany deemed that her opportunity had now come, and on December 8, 1902, she and Great Britain severed diplomatic relations with Venezuela, making it plain that the next steps would be the bombardment of Venezuelan towns and the occupation of Venezuelan territory.

TESTING THE MONROE DOCTRINE

"Here came the test of the Monroe Doctrine. If the United States permitted foreign nations, under the pretense of supporting their creditors' claims, to invade a weak debtor state by naval or military expedition, and to take possession of its territory, what would become of the Doctrine? At this point the direction of the American policy passed from Secretary Hay to President Roosevelt.

"England and Italy were willing to come to an understanding. Germany refused. She stated that if she took possession of territory, such possession would only be 'temporary'; but such possessions easily become permanent; and besides, it is difficult to trust to guarantees which may be treated as 'scraps of paper.'

"President Roosevelt did not shirk the test. Although his action has never been

officially described, there is no reason now for not describing it.

"One day, when the crisis was at its height, he summoned to the White House Dr. Holleben, the German Ambassador, and told him that unless Germany consented to arbitrate, the American squadron under Admiral Dewey would be given orders, by noon ten days later, to proceed to the Venezuelan coast and prevent any taking possession of Venezuelan territory. Dr. Holleben began to protest that his Imperial master, having once refused to arbitrate, could not change his mind. The President said that he was not arguing the question, because arguments had already been gone over until no useful purpose would be served by repeating them; he was simply giving information which the Ambassador might think it important to transmit to Berlin. A week passed in silence. Then Dr. Holleben again called on the President, but said nothing of the Venezuelan matter. When he rose to go, the President asked him about it, and when he stated that he had received nothing from his Government, the President informed him in substance that, in view of this fact, Admiral Dewey would be instructed to sail a day earlier than the day he, the President, had originally mentioned. Much perturbed, the Ambassador protested; the President informed him that not a stroke of a pen had been put on paper; that if the Emperor would agree to arbitrate, he, the President, would heartily praise him for such action, and would treat it as taken on German initiative; but that within forty-eight hours there must be an offer to arbitrate or Dewey would sail with orders indicated. Within thirty-six hours Dr. Holleben returned to the White House and announced to President Roosevelt that a despatch had just come from Berlin, saying that the Kaiser would arbitrate. Neither Admiral Dewey (who with an American fleet was then manœuvring in the West Indies) nor any one else knew of the step that was to be taken; the naval authorities were required to be in readiness, but were not told what for.

"On the announcement that Germany had consented to arbitrate, the President

publicly complimented the Kaiser on being so staunch an advocate of arbitration. The humor of this was probably relished more in the White House than in the Palace at Berlin."

There are two interesting facts about this occurrence which are not explained in this account. The first is that Mr. Roosevelt understood perfectly that he was dealing with Germany and that England and Italy were chiefly stage setting; and secondly, officers bearing such names as Winterhalter and Osterhaus would have held conspicuous posts under Dewey if he had gone to Venezuela, as an evidence that Teutonic origin did not prevent a man from being a thorough-going American.

THE SAMOAN CONTROVERSY

This conflict with the Kaiser was the second time that we were on the verge of war with Germany. The first time was over the settlement of the Samoan question to which the Kaiser referred in his talk to M. de Saint-André.

The Samoan question between the United States and England and Germany was a long-drawn-out controversy. One episode, the cumulation of several months' bickerings, shows how serious the differences between the nations were:

A German corvette, the *Adler*, lined up before Apia, and trained its guns upon the "rebels" led by Chief Malietoa. Before it could fire its first volley, however, something happened that took the German commander's breath away. A small war vessel, named the *Adams*, and bearing the American flag, sailed in between the German ship and the shore. Her decks were stripped for action and her entire broadside was turned in the direction of the German vessel. Presently Commander Leary, accompanied by his staff, appeared on board the *Adler*, presenting his compliments to Captain Fritze. "If you fire," he said, "you must fire through the ship which I have the honor to command. I shall not be answerable for the consequences." He then returned to the *Adams*, the drums of which were heard beating as they called the men to quarters.

What Captain Leary did, of course, was to present squarely the issue of war or peace to the German naval officer, precisely as, eleven years later, Dewey presented the same issue to Admiral von Diederich. That Leary's act was somewhat audacious is evident when one considers that his ship contained nothing but old-fashioned smooth-bore guns while the *Adler* had a fine assortment of new Krupp armament. Captain Fritze did not accept the challenge but steamed away.

This lively little scene grew out of a disagreement, with Germany on one side, and England and the United States on the other, which had made trouble for several years. Any one wishing the complete details will find them splendidly told in Robert Louis Stevenson's "Footnote to History." As far back as 1878, the American Government had secured from the reigning "King" the harbor of Pago Pago as a naval station. England also possessed vital interests there. But, some time afterward, Germany came along, ran up her flag at Apia, and issued a proclamation, coolly appropriating the islands to herself. Hardly had the imperial officials done this when the Stars and Stripes ascended another near-by flag-pole, announcing an American protectorate. In the interest of peace, both the German and the American Governments disavowed the acts of their agents, and both flags came down simultaneously. Then the Germans erected a stool-pigeon King, Tamasee, against Malietoa, who was friendly to the Americans and the English. President Cleveland sent three ships, the Kaiser three, and the English a new steel cruiser, the *Calliope*. The greatest excitement prevailed in the United States; every moment, the public awaited the news that seemed likely to spell war.

A STORM THAT AVERTED A WAR

Then occurred one of the strangest episodes in the history of war and diplomacy. Americans who had been picking up their morning papers in daily expectation of a clash found that the news, when it came, had a very different character. A terrible typhoon had struck the islands, destroying all the American

and German ships, with some loss of life. Only the British cruiser, the *Calliope*, escaped. This disaster had a sobering effect upon all three nations. Instead of going to war, England and the United States accepted Bismarck's invitation to come to Berlin and talk the situation over. He evidently depended upon his great skill as a negotiator to accomplish the German aim, which was absolute German supremacy over the islands. The United States maintained that the three nations should control the Samoans jointly, and this was the view that prevailed. It is said that the Samoan settlement was the first diplomatic failure Bismarck had ever sustained. "It has been left to the navyless American Republic," said the London *Saturday Review*, a paper notorious for its unfriendliness to our country, "to give us a lead in the path of duty and of honor."

EVIDENCES OF GERMAN UNFRIENDLINESS

But this event increased the hostility which Germany nourished against the United States. Even so great an admirer and well wisher of Germany as Andrew D. White, who returned to Berlin as Ambassador in 1897, admits that this unfriendliness prevailed widely. "On my setting down to the business of the Embassy," he writes, contrasting 1897 with 1879, "it appeared that the changes in public sentiment since my former stay as minister, eighteen years before, were great indeed. At that time German feeling was decidedly friendly to the United States. But all this was now changed." And, speaking of the German press, "there were in all Germany but two newspapers of real importance friendly to the United States. . . . All the others were more or less hostile, and some bitterly so. The one which I read every morning was of the worst. During the Spanish War it was especially virulent, being full of statements and arguments to show that corruption was the main characteristic of our Government, cowardice of our army and navy, and hypocrisy of our people. Nor was this confined to the more ignorant. Men who stood high in the universities, men of the greatest amiability, who in the former days had been the warmest

friends to America, had now become our bitterest opponents, and some of their expressions seemed to point to eventual war."

PRINCE HENRY'S INSULT

An incident at Hongkong, in the early part of 1898, intensified this ill-feeling. At that time, Germany aspired to play a great part in Eastern affairs, in pursuit of which ambition the Kaiser had sent his brother, Prince Henry, with a considerable fleet. The Kaiser had sped his brother farewell in one of his characteristically flamboyant speeches, instructing him to display Germany's "mailed fist" in the Orient. At that time Spanish-American relations were rapidly verging toward war; one result seemed inevitable—the destruction of Spain as a colonial power, and Germany, as well as other continental Powers, unfavorably regarded the prospect that her colonies might fall to the United States. Doubtless, part of the duties of this new German squadron was to make "observations," and to stand ready to act in the Philippine situation, should the imperial policy decide on drastic action. The German officers showed their sympathy with Spain and their contempt of the United States in all possible ways.

These insults culminated at a dinner at which Prince Henry gave to the officers of the foreign warships, which was attended by Admiral Dewey and other Americans. Following the usual custom, Prince Henry, rising, proposed toasts to the nations whose representatives were his guests. Diplomatic etiquette stipulated that these nations should be mentioned in alphabetical order, the French names being used. The first toast was, therefore, proposed to Germany (*Allemagne*). Next came England (*Angleterre*), followed by Spain (*Espagne*). Since the French name for the United States is *Etats-Unis*, the toast to this nation should have followed that to *Espagne*. Ignoring this, Prince Henry next proposed France. Few men were so punctilious on diplomatic etiquette as Admiral Dewey, and, at this affront, he rose, with his officers, and quietly left the dinner table.

Naturally the incident produced a sen-

sation both in Germany and America. Prince Henry sent an officer to apologize, but Admiral Dewey, again the soul of punctiliousness, refused to accept an apology sent second-hand. His Royal Highness had personally insulted the United States; the same gentleman must personally offer the *amende honorable*. Then Prince Henry made a ceremonial call and apologized. He explained the incident as due to a temporary mental aberration. Although he was using the French names for the other countries, he said, his mind persistently "connoted" the United States under its familiar German appellation, *Vereinigte-Staaten*. The blunder was such a gross one, such an inconceivable violation of international decency, that only a mental twist of this kind could possibly have accounted for it. Probably the American people would have accepted this explanation as satisfactory had not Germany outraged the United States in other ways than by mere breaches of etiquette.

The extracts from Mr. White's autobiography indicate the state of German feeling during the Spanish War. France and Russia were not over-friendly; but Austria and Germany actually attempted to interfere. In this campaign Austria took the lead. The Queen Regent of Spain was an Austrian archduchess, a niece of Emperor Francis Joseph and greatly beloved by him. Dynastic influence not only persuaded the Emperor to champion Spain against the United States, but the spectacle of an ancient monarchy going to pieces at the blow of a parvenu Republic was also disconcerting to the Central Empires.

OUR GRAVE PERIL IN 1898

In those fatal early weeks in April, 1898, preceding the War, Spain was frantically rushing from one capital to another, imploring assistance against the United States. About the busiest men in Washington were Von Hengelmüller, the Austrian Ambassador, and Von Holleben, who represented the Kaiser. Americans did not understand then, and do not understand now, the peril which then overshadowed them. We thought that

our real enemy was Spain; our real enemy, however, was a European coalition against us. Had Austria and Germany had their way, the whole of Europe, backed by its fleets and armies, would have forbidden us from going to war with Spain.

ENGLAND FOILS THE PLOT

The programme fell to the ground for one reason—England energetically refused to join the conspiracy. Sir Julian Pauncefote was then English Ambassador, and also the dean of the diplomatic corps. On April 6th, acting as dean, he received the Ambassadors of France, Austria, Germany, and Italy, presiding over a meeting big with significance for the United States. The full details of that meeting have never been published. Enough is known, however, to justify the statement that the Ambassadors discussed presenting to President McKinley a note protesting against American intervention in the affairs of Cuba as unjustified and declaring that such intervention would not be regarded with indifference by the great European Powers. But Sir Julian Pauncefote, acting under instructions received from Lord Salisbury, absolutely refused to join in any such protest. With the world's greatest naval Power taking the side of the United States, and with the general impression that such coöperation might take more than a diplomatic form, the carefully laid plans to coerce this country fell to pieces. Instead of this, the diplomats drew up a harmless note for presentation to Mr. McKinley. "The undersigned," it read, "representatives of Germany, Austria-Hungary, France, Great Britain, Italy, and Russia, duly authorized in that behalf, address, in the names of their respective Governments, a pressing appeal to the feelings of humanity and moderation of the President and of the American people in their existing difficulties with Spain. They earnestly hope that further negotiations will lead to an agreement, which, while securing the maintenance of peace, will afford all necessary guarantees for the reëstablishment of order in Cuba. The Powers do not doubt that the humanitarian and purely disinterested character

of this representation will be fully recognized and appreciated by the American nation."

Before participating in even this pious expression, Sir Julian Pauncefote called on President McKinley and asked if he had any objection to it. The President, having given his consent, the diplomatic representatives, in full regalia, led by Pauncefote as dean—the farce must have caused him infinite amusement, especially when he realized how different this "protest" was from the one originally planned—called at the White House and presented this formidable document. President McKinley, also with a straight face, received the gentlemen, took the paper, and thanked them for their good intentions. "The Government of the United States," he said, "appreciates the humanitarian and disinterested character of the communication now made on behalf of the Powers named; and, for its part, is confident that equal appreciation will be shown for its own earnest and unselfish endeavors to fulfil a duty to humanity by ending a situation the indefinite prolongation of which has become insufferable."

A newspaper humorist summed up this momentous performance as follows:

"Said the Six Ambassadors: 'We hope for humanity's sake that you will not go to war.' Said Mr. McKinley in reply: 'We hope if we do go to war you will understand that it is for humanity's sake.' And the incident was closed."

Afterward, when Germany adopted a policy of conciliation toward the United States instead of the mailed fist, she attempted to explain away her part in this international episode. Unfortunately, the Kaiser's official acts, after war began, are things that Americans can never forget. Mr. William Roscoe Thayer, in his recently published "Life of John Hay," quotes the Kaiser as having said: "If I had only had a fleet, I would have taken Uncle Sam by the scruff of the neck." The behavior of his fleet at Manila, though it did not actually succeed in doing anything so violent as this, constantly demonstrated its ambition to go to extremes. Only Admiral Dewey's sagacity, energy, and sense of his nation's dignity prevented trouble.

Now Admiral Dewey's hobby, next to seamanship was international law. The Navy regarded him as one of its greatest experts on that subject. When, after defeating the Spanish squadron at Manila, he established the blockade, the American Admiral understood all the niceties of his situation. His first difficulties with the Germans arose over their failure to understand the merits of this blockade. According to law, the blockading admiral controls the harbor; even warships can enter or leave only with his permission, and they occupy such anchorages as he assigns them.

GERMAN INSOLENCE AT MANILA BAY

But, one fine day, into Manila Bay came the German cruiser *Irene*, steamed grandly past Dewey's flagship, the *Olympia*, and anchored in a place selected by herself. Dewey, believing that this violation of sea manners was merely caused by ignorance, ignored it. One morning at three o'clock, another ship bearing the German flag was picked up by a searchlight. By the time Vice-Admiral von Diederich arrived, Germany had a squadron of five vessels at Manila. Germany's naval forces indeed, had greater strength in the Philippines than had those of the United States. This large fleet in itself constituted an unfriendly act. England, which had infinitely greater interests in the Islands, at no time had more than three. When Dewey paid his call of ceremony on Von Diederich, he alluded to the size of the German squadron.

"I am here by order of the Kaiser, sir," replied Vice-Admiral von Diederich, in his most Germanic manner.

The Philippine insurrectionists, who were then coöperating with the United States, were preparing to make an attack on the Isla Grande in Subig Bay. They desisted when the German cruiser *Irene* threatened to shell them. At this Dewey sent the *Raleigh* and the *Concord*, their decks cleared for action, with instructions to drive off the *Irene* and take the Spanish position. When the American ships entered the Bay at a furious speed, the *Irene* put on full steam and departed.

But Germany's most offensive act took place on the day Dewey started his

bombardment of Manila. As Dewey's squadron started to take up its position before the batteries at Cavité, the German squadron followed its rear. When Dewey stopped the Germans also stopped. No one even to-day knows what these manœuvres meant, opinion dividing as to whether Von Diederich meant to be merely insulting or whether it was his plan to fire on the American ships—to open war for the German capture of the Philippines.

Now followed an episode that will long be remembered in our navy. The three British ships came along and took up a position between the American and the German squadrons. Von Diederich could not fire without hitting the English men-of-war. If Von Diederich had ever intended to open hostilities, this little action chilled his ardor; soon after, three of his vessels disappeared.

PRINCE HENRY'S VISIT

All these things explain the suspicion and even unfriendliness with which Americans have since regarded Germany. Since then, the Kaiser has sought to gain their friendship; he sent over his brother, Prince Henry—the same man who had insulted Admiral Dewey at Hongkong in 1898—to make a visit in the interest of better German-American feeling. The Americans turned out in large numbers to see the Prince; German-Americans raised their "hochs" wherever he appeared; and the German societies held a huge *Fackelzug*—torchlight parade—in his honor. His Royal Highness behaved commendably in democratic fashion, showed himself a master in American slang, using with skill and appropriateness such phrases as "It's a cinch," "Not on your life," "Hustle," and "Get busy." Looking back on this visit now, it seems that it was made more as an attempt to promote Pan-Germanism in the United States, than as a sincere tribute to the Nation. However, neither Prince Henry, nor exchange professors, nor Germanic museums allayed the resentment of Spanish War days, nor converted American opinion to approval of the Kaiser and his system of government, though it was not realized that the cultivation of our friendship by Germany

had its sinister side. The Germans who had left the Fatherland for America had received scant attention from Germany until about the time of Prince Henry's visit. From that time on they were in every way encouraged to keep up their German affiliations, a policy which was designed to make effective the ingenious Delbrück law of 1913 by which a man born in Germany or even of German parentage, who had become an American citizen could still be a German and owed his first allegiance to the Fatherland. This law was passed in the mistaken belief that if ever trouble should come between the United States and Germany the German element in the United States would side with Germany. This was slander upon the loyalty of Americans of German extraction, but there is no question that Germany believed it could count upon them.

Mr. Herbert Bayard Swope, recently back from Berlin, in his extremely enlightening book, "Inside the German Empire," gives the following picture of the German idea of German-Americans:

"How strong Germany believes herself to be in America can be seen in any of the political maps issued by the Pan-German League, on which a great blob of pink indicates the residence in America of the nine millions of German birth or parentage. Those making up this number are claimed as indirect members of the league, who are, or ought to be, as the Pan-Germans see it, ready at all times to do Germany's bidding. It is the belief of these Pan-Germans that through their far-flung membership some day German *Kultur* will dominate the world.

"Not only does Germany believe that her political strength in this country is great enough to make the American Government take it into consideration, if not to make it actually subservient to the Wilhelmstrasse, but the belief goes further. One prominent member of the Government told the Ambassador he had been informed that America would not risk a war with Germany, because 'there were five hundred thousand trained Germans ready to bear arms in the United

States against the American Government

"There may be,' was Gerard's quick response, 'but there are five hundred thousand lamp-posts in America ready to string them up on if they ever try it.'"

In 1914 the Kaiser again made an effort to test the Monroe Doctrine and again got another European nation to set the stage for him. For years the financial affairs of Haiti had been in a deplorable condition and steadily getting worse, so that the interest on loans to French and German bankers ceased to be paid. This led to a situation calling for some kind of intervention. Under the Monroe Doctrine if there was to be any intervention it would have to be American. Nevertheless in 1914, the French Government made representations at Washington of their desire to participate in the regulation of the Haitian customs, and a certain official in the State Department represented to the French ambassador in a written dispatch that it was "natural and desirable that one of the three officials in charge should be a Frenchman."

Although the State Department promptly repudiated this semi-official statement as having no authority, nevertheless in July, 1914, the French chargé d'affaires still maintained that the French had some right to join in control of the Haitian customs because of the magnitude of French investments in that country, and argued that neither the United States nor any other nation ought to be accorded preferential treatment.

THE GERMAN MISTAKE

In the same month, July, 1914, Germany also made a proposition for customs control in Haiti. In this case, the note from the German embassy pointed out that, even though the American Government believed it inadvisable to have interested European Powers participate in the control of Haitian customs, nevertheless the Imperial Government must give heed to public opinion in Germany. The German note went so far as to state that the simplest solution of the difficulty would be to include Germany, and that Germany would not understand any other arrangement.

Much more emphatically than the Department answered the French representations did it define its position in regard to this extraordinary German document. In the most unequivocal terms it stated that its policy was not subject to any variation; that neither foreign mercantile interests nor any other interests proceeding from outside of the American hemisphere could be so extended as even to constitute a joint control in whole or in part of the government or administration of any independent American state.

Within a month of this correspondence the European War broke out and since then we have established a protectorate over Haiti. But it is well to remember

that Samoa, Manila Bay, Venezuela, and Haiti form a part of one of the German efforts for a place in the sun; an effort that would be carried out with a thoroughgoing Prussian military spirit if a favorable opportunity presented itself. As we look back upon these things it becomes plainer and plainer that this is not the first time in recent years when our security has been threatened. On the contrary we have been more or less actively subjected to far more serious dangers than we had any idea of. And it also becomes evident that a dominant Germany in Europe would in all probability mean that we should have to fight to maintain the Monroe Doctrine.

ORGANIZING THE NATION'S FIGHTING STRENGTH

WHAT HAS BEEN DONE TO ENLIST THE AID OF AMERICAN INDUSTRY IN TIME OF WAR

BY

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MODERN war means bending all the energies of all the people toward a common aim. That is a general statement. It is more easily appreciated by a concrete case.

There are one hundred automobile manufacturing concerns in this country—producers mostly of pleasure vehicles. There are three hundred manufacturing institutions devoted to lines accessory to this industry.

The automobile business is one of the best organized of all our manufacturing activities. And yet it is probable that a large proportion of these concerns would change from motors to munitions in war time—the proportion, which might be as high as 75 or 80 per cent., naturally depending on the kind and size of the war. Many of our other industries, both great and small, would surely be affected in the same way.

A close observation of the experience in foreign countries has shown us the vital necessity for a plan for the conversion of our industries from a peace to a war footing. Wars, as now waged, involve every human and material resource of a belligerent nation. Every factory and every man, woman, and child is affected. Every sinew of industry, of transportation, and of finance must be harnessed in the country's service, to the one end and for the common good. In England, two years and a half ago, there were three Government arsenals. To-day, thousands of England's industrial plants are being operated as Government factories, for the production of war materials, and many other thousands of plants, still under private control, are centering their energies in this same direction. The teaching of the munitions-making art to these thousands of manufacturers and to millions of industrial workers, both men and women,

has called for a work in industrial organization and education such as the world has never before seen. In France, in Germany, in Italy, in Japan, and even in Russia, this same education and organization of the industrial forces is going forward.

We have here in the United States vast resources in manufacturing and producing equipment, but they are unorganized and uneducated for the national service. Our observations of the European War have taught us that it is upon organized industry that we must base every plan of military defense. In war, anywhere up to 80 or 90 per cent. of our industrial activity might be centred upon the making of supplies for the Government.

TIME NEEDED TO PREPARE INDUSTRIALLY

We have learned also that from one to two years of time and of conscientious effort are needed to permit any large manufacturing establishment to change over from its usual peace-time commercial activity to the quantity production of war materials for which it has had no previous training. Delays of this kind in time of emergency cannot but result in closed plants, in the disruption of labor organizations built up over a period of years, in a loss of skilled men through enlistment in the army, in great financial loss and even ruin to manufacturers, and in those same chaotic conditions which nearly wrought national disasters to several of the countries at the outbreak of the European struggle.

We have had no experience in the kind of warfare now being waged abroad, and yet this is exactly the sort of thing for which we must prepare, or it is worse than useless that we prepare at all. Industrial preparedness is strictly in keeping with the natural tendencies and abilities of our people. It is the basic and at the same time the cheapest form of preparedness. We have already the investments in plants, in tools, and in machinery, and more important still are our resources in skilled workers. But it is only through the most careful methods of organization and education that we may make all these resources available. Each manufacturing

plant must be taught, now, to make that particular part or thing for which its equipment is best suited and for which, by a carefully prepared classification, it is to be held accountable. In normal times annual educational orders, of such small size as not to interfere with commercial products, should be delivered each year under Government inspection. Skilled labor in every line should be so enrolled in an industrial reserve as to insure against its loss to industry through enlistment in the fighting forces. There exists no other means of harnessing industry in the defensive service of this Government. Every manufacturing institution in the country carries fire insurance—for the future it must demand that it be given war insurance as well.

THE NECESSITY FOR ACTION

For more than two years, this country of ours has been skating on the thinnest kind of diplomatic ice. An aroused national sentiment for an adequate defense against invasion has been reflected in Congress through legislation and large appropriations to meet the demands of the American people. What this Nation needs now is action—and a comprehensive, definite, and continuing plan for such action. How many men, representing the sources of material supply upon which we now know must depend our success or failure in any war, have to-day the least knowledge of what their plants and their workmen might be called upon to do tomorrow under the most chaotic conditions of governmental emergency? Would they not feel safer—and their stockholders and employees as well—and would not the whole Nation actually be a thousandfold safer against even the threat of aggression if every manufacturer knew, through a carefully planned prearrangement, each plant's exact niche in the great general scheme of war material supply?

That we must nationalize geographically the munition-making art, we now know. To leave it centred near our East coast may be suicidal and certainly exposes us to a risk we dare not run. We must distribute and nationalize the munitions industry. Each community and manufacturing

district must be used in the most effective way. To each community throughout the country will be brought home the part it must play in the event of national emergency. To urge and aid in pushing to speedy completion comprehensive plans for the education and organization of American manufacturers, for the production of Government materials, would seem the dictate of plain business sense. There is no mystery in the job of preparing this country for defense. Secrecy in movement and accomplishment is largely buncombe. We deceive, and can deceive, the American people only. Our national safety lies in the thoroughness with which American business men do their "bit" and in the manner in which we advertise to the other nations of the world our businesslike plans for the national defense.

In war, as in peace, there are now Three Graces—"Army, Navy, and Industry, and the greatest of these is Industry." The European struggle is, in its last analysis, a war of munitions—a war of factories, of producing powers, and of skilled workers.

THE INVENTORY OF MANUFACTURERS

A little more than a year ago the Committee of Industrial Preparedness of the Naval Consulting Board, with the support of many thousands of engineers, made an inventory of the country's manufacturing and producing resources. This work has been practically completed, and 27,000 inventories are now on file in the office of the Council of National Defense in Washington. Suppose one of these 27,000 plants to be a steam-pump manufacturing concern in Lima, O. Under the peace-time plan we proposed, the Government might give the pump company a standing order for the metal parts of perhaps not more than ten eight-inch shells annually. Even this minimum annual order, paid for upon a basis of cost, plus a limited rate of profit, produced in accordance with drawings, gauges, specifications, and instructions supplied by the War or Navy Departments, inspected and tested in a Government assembling depot in the Middle West, would insure far-reaching

results. Every department of the producing works, from material purchasing to shipping, will learn the sources of material supply, peculiarities of treatment, methods, tools, and jigs for machinery, and even how to pack and route for shipment. The engineering department will have in its files the latest working drawings, and all arguments as to proper design for quantity production will be disposed of in advance. Last, but far from least, the business end of the institution will be brought into contact with the Government and its methods of business, to the very evident advantage of both parties. The advantages of such a system should need little by way of argument.

The present sources of supply for Government materials would be multiplied a hundredfold. The decentralization of our munition supply would be begun and its location shifted westward from its dangerous position near the coast. The bogey of the munitions trust would be laid forever.

We now know that in war our munitions-making must become our one great national industrial undertaking, and we must make our plans accordingly. Upon the industrial or business side the arguments favoring this educational policy are sound. Every manufacturer owes it to himself, to his stockholders, and to his workmen to insure against a prolonged shut-down of his plant. The ability to swing quickly from the commodities of peaceful commerce to the production of the emergency materials of war will constitute the greatest insurance against Government control, against disruption of organization, and against months of community chaos which cannot but spell physical suffering and privation to labor and money loss to the business itself.

WAR, LABOR, AND CAPITAL

The interests of Government, Capital, and Labor are common interests in war, and it is only through prearrangement for production, profits, wages, and relations that the national welfare may be safeguarded.

In most industries, in normal times,

there occur slack periods during which the tools of production and the skilled workmen in some proportion stand idle. The duration of these periods varies in different industries, and with different business conditions. The industrial inventory of the Naval Consulting Board brought to our attention large equipments having, in normal times, slack periods of from one to several months in duration. Some industries are seasonable in character, and many millions of dollars of plant investment stand idle, or partially idle, through considerable intervals each year. Such a condition is, of course, economically wrong, and an abnormal overhead must be charged against the commercial product.

COÖPERATION IS ESSENTIAL

If cordial and sympathetic relations can be established between the industries thus affected and the various departments of the Government, the advantages should prove mutual. Existing tool equipments could be kept fully employed upon Government business, labor would be kept busy, and Government supplies procured at moderate prices. Such a plan of co-operation between industry and Government is now all the more feasible, because in all future plans for the national defense, industry of every kind must be kept trained and ready for instant action, through the placing of minimum annual educational orders. Our whole economic structure will be strengthened through coöperation of this kind.

In the preparation for changing the country from a peace to a war basis Congress has done its part. The fundamental basis is outlined in two public documents. The first is the Army Reorganization Bill. It provides, first, for the listing and the analysis of equipment of all manufacturing plants capable of conversion to the production of war materials. Full power, through the President, is conferred upon the War Department to commandeer any or all plants in this country, and heavy penalties for refusal are provided. It provides also for the procurement of the special gauges, drawings, tools, jigs, etc., necessary for

use in private as well as Government plants, and constitutes a great legislative step forward in the educational plan I have outlined.

The other of the two public documents, the Army Appropriation Bill, provides for the Council of National Defense. No more powerful body has ever been created by Act of Congress. It is composed of six Cabinet officers: the Secretaries of War, Navy, Interior, Agriculture, Commerce, and Labor. It is provided with a director and an Advisory Commission of seven men, "each of whom shall have special knowledge of some industry, public utility, or the development of some natural resources, or be otherwise specially qualified, in the opinion of the Council, for the performance of the duties thereafter provided."

It is provided that it "shall be the duty of the Council of National Defense to supervise and direct investigations and make recommendations to the President and the heads of executive departments as to the location of railroads with reference to the frontier of the United States, so as to render possible expeditious concentration of troops and supplies to points of defense; the coördination of military, industrial, and commercial purposes in the location of extensive highways and branch lines of railroad; the utilization of waterways; the mobilization of military and naval resources for defense; the increase of domestic production of articles and materials essential to the support of armies and of the people during the interruption of foreign commerce; the development of seagoing transportation; data as to amounts, location, method, and means of production, and availability of military supplies; the giving of information to producers and manufacturers as to the class of supplies needed by the military and other services of the Government, and the requirements relating thereto."

In this great task the Council and its Advisory Commission need the active and continued support of all Americans in order that they may, in the words of the Act, "create relations which will render possible in time of need the immediate concentration and utilization of the resources of the Nation."

WHAT CAN THE RUN-DOWN MAN DO ABOUT IT?

PRACTICAL SUGGESTIONS THAT ARE ESPECIALLY VALUABLE IN MARCH, "THE YEAR'S BLUE MONDAY"

BY

CHARLES PHELPS CUSHING

TO MAKE sure that this series of articles shall be authoritative, the WORLD'S WORK has arranged to have them reviewed and approved by the Life Extension Institute before they are published.

The Life Extension Institute was organized by well-known scientists, publicists, and business men as a semi-philanthropic enterprise to disseminate the knowledge of healthful living among the people. Ex-President Taft is president of the Board of Directors, and its professional advisers include some of America's most distinguished physicians and surgeons, as well as the more prominent educators. The Institute's approval of these articles, therefore, assures their scientific character.

MARCH is the year's Blue Monday, but medical scientists assure us that it need not be. It is a trying season for the "run-down" man, and the scientists show us why. They make us face the unpleasant facts—but they do not dwell upon them to encourage morbidity. As soon as they have described the situation they go on to advise the run-down man what he can do about it. And this, it would seem, is both good philosophy and good physiology. "We are not damned for doing wrong," wrote Robert Louis Stevenson, "but for not doing right; Christ would never hear of negative morality; *thou shalt* was ever his word, with which he superseded *thou shalt not*. . . . If a thing is wrong for us, we should not dwell upon the thought of it; or we shall not dwell upon it with inverted pleasure." The modern medical scientist holds to the same sort of philosophy in therapeutics, and we can parallel the passage from Stevenson with another from a hygiene bulletin which has the stamp of approval of a hundred leading American scientists: "It is not a fear of illness or death that we should encourage, but a love of health, a sense of responsibility for the care of our bodies, a desire for bodily endurance and efficiency and full achievement. If the mind is fixed on these ideals, and the al-

ready known means of approaching them are utilized, heart disease, kidney trouble, and the needless miseries that embitter the lives of so many may be left to take care of themselves. It is not so much necessary to fight disease as to cultivate health for the happiness, contentment, and moral gain that it brings."

If this article creates a fear of March weather the fault will lie either with the reporter or the reader, for none of the various authorities consulted had a message that could be read as dispiriting. Yes, they agreed, the mortality statistics show that March in this country is the most fatal month of the year. Not only does it usually pass all other months in the total number of deaths caused by the respiratory diseases, pneumonia, bronchitis, la grippe, and colds, but it also stands highest in the monthly totals of mortality—all causes added together. Yes, at a time when resistance usually is at lowest ebb, along comes March with a protracted "spell of weather," snow, winds, rain, equinoctial storms. Yes, it is the year's Blue Monday. . . .

The layman forthwith proceeds to make an eloquent arraignment of the bestiality of the weather. The weather in March is the one thing in Nature to which he seems hopelessly unable to reconcile himself. He can stand the gaff in the later equinox



HEALTH DEPT "LIFE LINES"

No. 1

**Walk a mile in the open air
twice a day. It will add ten
years to your life. If you
don't believe it, try it and see**

DEPARTMENT OF HEALTH, CITY OF NEW YORK

without a murmur, can even feel stimulated by it, but at the fog end of winter the rudeness of the climate tries him in every fibre.

To this the scientist replies: "You are blaming most of your physical trials at this season, I see, upon the weather. Very well, I will go as far as the next man in granting importance to atmospheric conditions. Not only do they have most important effects upon our bodies; they appear to contribute powerfully toward determining the world's civilization. More about that later, if you like. . . .

Well, one of the chief reasons why the run-down man finds himself in a bad state of health in March is because of the climate in which he has spent nearly all his waking hours for the preceding four or five months—a summer climate, with an atmosphere calm to the point of stagnation, far too even in temperature, and commonly drier than the air of the Sahara desert. We will try not to be too positive about the reason for the increased amount of respiratory disease in March. Most authorities, however, believe that it is due to diminished resistance at this season. And what causes this? In one word—*housing*. Lack of outdoor life com-

bined with an increased opportunity for infection through the closer association which occurs during the winter months. Add to housing some other characteristics of the American's way of life—excitement, overeating, and lack of exercise, insufficient sleep, constipation, and the like—and it is no wonder that he becomes 'run-down' at the fog end of winter? Men who are in good physical condition find genuine stimulation in winds, in a certain amount of variation in temperature, and in the alternation of cloudy days and fair. The variable weather makes them more robust rather than less."

Prof. Ellsworth Huntington, of the Department of Geography of Yale University, finds by the evidence of the pay rolls of piece workers in factories and the closely checked records of students at Annapolis and West Point that March shows an increase in physical and mental activity over the averages in midwinter. At the same time he takes note of the increased mortality, etc., as shown by the health statistics of the country at large. In a book that is as interesting as fiction, entitled "Climate and Civilization," he does not dodge the issue:

"The cities swelter for a few weeks in July, and that sends the death rate up enormously, especially among children who are taken quickly sick, and who either die after a few days' illness, or recover. That is why the curve drops so sharply in midsummer. In the winter on the contrary, although it drops almost equally low, the maximum number of deaths per day does not come till March although by that time the average energy of operatives has risen considerably. This is because people become sick in January and February, especially those who are elderly, and finally die after lingering illnesses quite unlike those of children. In another passage he puts the case the way: "People do not diminish their activity at once, especially in winter. They draw on their nervous energy, and thus exhaust themselves. They are like horses which pull on the bit, and when urged a little break into a run, straining themselves by their extreme speed. Then they are pulled up so suddenly that they

re thrown back on their haunches and injured."

A characteristic the business man cannot fail to admire in Huntington is the way this student of the effects of climate goes to the point in attempting to interpret the practical value of his data. He does not stop after he has pointed out the effects of climate, he suggests that we try to "conquer climate" by ordering our ways of life as weather dictates. And he does not overlook the important matter of indoor climate: "Take the harmful winters of the northern United States. It is highly probable that the loss of energy which occurs at that time may be largely avoided, or at least greatly diminished. Much of it arises from the fact that after the wonderfully stimulating autumn weather, when we have been living under almost ideal conditions of mean temperature, of humidity, and of variability from day to day, we suddenly begin to heat our houses. We create an indoor climate of great uniformity, of unduly high mean temperature, and of the most extreme dryness. All of these conditions are harmful. If our houses were kept at lower temperatures, if the temperatures were varied from day to day, and if the humidity were kept at the optimum, we should increase our efficiency greatly. We should be comfortable, also, for with proper humidity, and with changes from day to day, we should not feel the need of the high temperatures which we now require because the extreme dryness forces the body to give up much more heat than would be demanded by air of greater humidity. Moreover, the uniform dryness within doors does almost untold harm in parching the mucous membranes and thus rendering us peculiarly liable to colds, grippe, and similar ailments which often lead to serious diseases such as pneumonia and tuberculosis. Of course, we could not entirely avoid colds by the method here suggested, but we could diminish them. In the autumn, before our houses are heated, colds are comparatively rare, and the same is true among people who live out of doors in winter. If the conditions inside our houses could be like those that prevail in autumn, the general health of



HEALTH
DEPT

"LIFE LINES"

No. 2

**Become a fresh-air crank,
even at the risk of being
disliked. Better a live fresh-
air crank than an almost
lifeless hot-house invalid**

DEPARTMENT OF HEALTH, CITY OF NEW YORK

the community would probably be much improved. In this one way there might be a saving not only of millions of dollars' worth of valuable time, but of an immense amount of nervous energy which is wasted because persons who are irritated by colds do or say things that they would scorn under normal conditions."

DON'T QUIT YOUR WORK

These observations of a geographer who is an authority on climate tallied, in general, with those of a specialist in hygiene. Dr. Eugene L. Fisk, of the Life Extension Institute, expressed his belief that most of the suggestions offered by the climate man were excellent. There is not much doubt, Dr. Fisk said, that the prime reason why March is so trying to many of us is that we are run down; and the reason for that physical condition probably lies in the way we have lived during the winter. The rigors of March, in themselves, ought not to seem so formidable. Dr. Fisk never advises any one to run away from them unless there appears to be no other course open. It is easy, he said, to create a valetudinarian by coddling a man who has nothing organically the matter with him, but who simply is "run down."

Often such a man gives up his work to dodge the weather, when, if he would improve his habits of life, he might just as well or better stay on the job. It is true, whatever the reason, that activity speeds up in March, at a time when our reserve force, on account of housing and the like, is low. "But," reasons the doctor, "would it not be better common sense to ease down a bit, if possible, than to quit work? Of course, if you have the time and the money to take a winter vacation, and can take it in the spirit of a vacationist, not of an invalid, why go ahead and have a good time. Then you are to be envied. But the fellow to be pitied is one who could as well have stayed at home, but hies away to spend a month in a hammock under a palm worrying about business."

Suppose, first of all, the doctor suggested that we are dealing with a run-down man who is not senile and who, after being looked over by a competent medical examiner, is found to be organically sound. Our case is a business man who desires, if possible, to stay on the job: "His physical reserve is low, but that is no cause to despair, for his reserve is not like Humpty-Dumpty—it can be restored. While he is doing the restoring, it should not, in most instances, be necessary for him to quit his work—particularly if he is really interested in it. Work ordinarily comes in for a great deal more blame than it deserves. A man who is fit can get through an amazing amount of it; but when a man who isn't fit fails to come up to the mark it is all too common to hear the work blamed instead of the physical condition of the worker. To many American business men, perhaps to the majority, their work is fascinating. We often hear it spoken of as 'the game.' Take that stimulation away from a high-strung man and he sadly feels the want. Now, often enough, there is no need to take it away. The thing to do is not to pack him off, drooping in spirit, to a tropical island, but to reason with him to ease down, to learn to direct his business without assuming so great a load of detail. This morning I was talking with a man who is handling a convention. There was nothing organically

wrong with him, but he was run down. I could easily have told him to go away for his health, but the chances are that he will play under the rules (now that we've talked them over) and be far better off at the end of the month than he would have been if he had gone away, thinking of himself as an invalid and worrying about how things were running at headquarters."

RULES FOR THE RUN-DOWN MAN

What are some of these rules and which the run-down man should play? One of them already has been indicated above. Another is to attempt to increase the pitifully small allowance of time that the sedentary man usually spends in the open air. The prescription runs: "Fresh air in the sleeping room; a walk outdoors before work or before bedtime; cooler and fresher air, if possible, in the house and the office." Exercise? Dr. Fisk repeatedly has remarked that it is not necessary to health to exercise hard and long. A certain amount of "elbow grease" is required, but ten minutes of brisk settling-up movements every day may suffice, or a little time spent at some of the less strenuous outdoor exercises such as walking, skating, horseback riding. The great point here is to take your exercise every day. It need not be much, for a run-down man may not be able to stand much, but he should get his share in proportion to his strength. Sleep? He should see to it that he gets as much as he needs and regularly, like his exercise. Stimulants? Do without them or decrease the allowance of them, tea and coffee as well as tobacco and alcohol. And don't overeat.

The purpose of all this, the doctor hastened to point out, was not to take more of the joy out of life but to restore the freshness of life's flavor. An important part of the "prescription" is more play. Don't work in the evenings—have some fun. Get out among your friends, take some games, get interested in a hobby, go to some concerts, lectures, "movies," plays. Bowling might do you good.

According to Dr. Fisk, even pool and billiards are mildly beneficial exercise for a middle-aged man and serve to get him

WHAT CAN THE RUN-DOWN MAN DO ABOUT IT?

mind off his work. "He will be better off, at least, walking around a table and poking at an ivory ball than he would be if he sat by the fire smoking a cigar. The caution for all the activities mentioned above is: *Know when to quit.*

"This relates," the doctor explained, "not only to your hours of sleep but to

our run-down man, after a week or so of taking his work a little easier and of getting more exercise, fresh air, sleep, play, and the like, finds himself some morning feeling happier than he did when he started the experiment, he may rest assured that the cure is working."

The reporter ventured a suggestion to



BLUSTERY MARCH

March has been unjustly called the year's Blue Monday because in its changeable weather the run-down man reaps the whirlwind of months of neglect of the simple rules of proper living. To the robust man March is a stimulation

your nerves and to your capacity for enjoyment. Don't keep playing a game until your nerves are on edge. We often read about the tired business man and the theatre. There is no sense in the tired business man going to a theatre. If he really is tired and can't enjoy a play, he had better go home and go to bed. I am dwelling on some of these points because one's capacity for enjoyment is an important matter—a barometer of health. When

the doctor that he say something about the men who do not find their work absorbing, who are subordinates and can't relegate any of the thousand and one little matters to a helper.

"You mean, particularly, the man in a miscast rôle," the doctor answered. "He will find more zest in his part if he does what he can to improve his physical condition. For the rest of his programme I can offer no suggestion so valuable as the ad-

THE WORLD'S WORK



I. THE ROBUST MAN—

When rude Boreas with his attendants, Snow and Sleet, hold high carnival in the winter months the run-down man fails to get the stimulation from the winds that the well man does



II. ENJOYS WINTER WEATHER AND—

Many people consider a trip to balmy climates an imperative necessity. To the business man of moderate means such a trip is out of the question—

WHAT CAN THE RUN-DOWN MAN DO ABOUT IT?



III. PALM BEACH IS FAR FROM ESSENTIAL TO HIM

— but he can remain just as healthy or healthier than his migratory brother at little or no expense by getting sufficient exercise and plenty of fresh air and being cautious in his diet

monition to put flavor into his life by means of an avocation or a hobby. If he knows what he would like to do he should try his hand at it in his spare time. Politics, music, carpentry, gardening, writing, photography—whatever appeals to him as worth attempting. He will never know

his capabilities until he tries them out. He may perhaps find what he wants in a sport, as certain men I know have found it in tennis or golf."

Every authority the reporter consulted emphasized the need of the run-down man for more fresh air. Among a number of

THE WORLD'S WORK



HAVE A HOBBY

An interest in politics, music, carpentry, or gardening acts as a refreshing tonic in restoring the run-down man to health, but better still is a hobby, such as bowling, that brings exercise with it

practical suggestions along the line of what to do, one of the most interesting was that offered by Dr. Charles F. Bolduan, director of the Bureau of Public Health Education of New York City. In mid-winter Dr. Bolduan aroused New York's interest in fresh air and ventilation by declaring an "Open Window Week," and

"Walk to Work Wednesday." Half a dozen other cities followed New York's example. Make March an open window month, declared Dr. Bolduan, and we shall see its staggering total of deaths from respiratory diseases take a sudden drop.

"When we put out a chart this winter showing that deaths in New York City rise and fall as the windows open or close, we did not, of course, mean to say that closed windows are the sole reason for the spread of respiratory disease. A great many things—as many as the Walrus named over to the Carpenter—could be put on the list: sealed windows, drinking cups and kisses, uncovered coughs and sneezes, roller towels, etc. But fresh air is the first point to hammer on, and the best way we know to get fresh air into a house is to open the windows. No one is going to take me too literally on a zero day and freeze to death. We will feel that we have accomplished a great deal if we can even so much as persuade people to give their workrooms and living rooms an airing a couple of times a day, and if we can induce them to open a crack of window large enough to reduce the indoor temperature and furnish a little circulation. I know that this very office is not as cool or as well ventilated as it should be. The boss opens the window half way and some one else furtively pushes it nearly



KEEP FIT BY EXERCISE

Men who are in good physical condition find stimulation in winds, in a certain amount of variation in temperature, and in the alternation of cloudy days and fair; the variable weather makes them more robust

WHAT CAN THE RUN-DOWN MAN DO ABOUT IT?

but again. One doesn't like to see others uncomfortable, so we let it stand at a compromise height. At least, we've accomplished something—the air is cooler and moister and less stagnant than that of most offices and we all will feel better. Try the experiment and see for yourself.

"It is the same way with the walk-to-work suggestion. Some of us live too far away from the office to take the idea literally. But, surely, we can all plan to walk part of the way. Again, I say, try it and see how much better you will feel. The children in our fresh air schools and in certain schoolrooms where the windows are kept open the year 'round are quicker to learn their lessons and freer from colds than pupils in warm rooms. Science knows the reasons, but the business man won't yet believe. If he has ever tried working in a cool, well-ventilated room he has only to make the experiment to be shown the benefits. Of course, he should not be too hasty about making the change. He must get broken in, not too abruptly. The best temperature for office work is a shade *below* 70° and *not above* 70°."

A bulletin of the Life Extension Institute gives some further practical hints which should be noted:

"Linen mesh and cotton mesh next the skin are advisable. Those who are



UNDERGO A PHYSICAL EXAMINATION

Every so often when you feel run down have yourself examined by a competent physician. There is no truer phrase than the old saw about the ounce of prevention being worth a pound of cure.

not comfortable in linen mesh underwear may wear light-weight woolen or silk over cotton or linen mesh.

"Very heavy outer wraps should only be worn in blizzard weather. Medium-weight overcoats or wraps are less likely to create sensitive skin conditions that 'soften' the individual and invite colds.



ENJOY YOURSELF IN THE EVENINGS

Lock business cares and worries in your desk when you go home in the evening. A few hours at a concert or a lecture or at the theatre is a wonderful brain tonic and a producer of sound sleep.

THE WORLD'S WORK



WALK TO WORK

If you live too far to walk all the way, walk at least part of the distance. New York, through its Bureau of Health Education, has adopted a "Walk to Work Wednesday" slogan

"Chest protectors are worse than useless. They might better be worn on the feet. Thin-soled shoes are often responsible for colds. Rubbers should be worn in wet weather, as few shoes are really waterproof, and the cold, damp soles may strike a chill through the extremities.

"Open-work stockings and thin-soled

shoes worn by women offer cordial invitation to colds, grippe, and also pelvic troubles.

"As to wet feet, trench warfare has contributed to our knowledge of this subject. Soldiers now suffer from trench-foot (Local Frigorism), due to enormous loss of heat through the feet and legs while



OVERCOMING CLIMATE

A little time spent in outdoor exercise, such as skating, each day where plenty of fresh air can be breathed is as good as a trip to Florida and much less expensive

WHAT CAN THE RUN-DOWN MAN DO ABOUT IT?

standing in cold water. This loss has, in some cases, equaled the heat value of all the food consumed in twenty-four hours—a soldier's food thus going wholly to heat the cold layer of the trenches. Woolen stockings, with a layer of waterproof material ensuring a layer of air which

an extension of the skin. The tissue in the nose responds very quickly to changes in the circulation of the skin as well as to stagnant or infected bowel conditions.

"To render the skin resistant—contemptuous, as it were, of change in temperature—is one of the most important



THE HEALTH-GIVING OPEN WINDOW

Deaths in New York City rise and fall as the windows open or close. Fresh air is the most important point in a health campaign, and the best way to get fresh air into a house is to open the windows

prevents loss of heat, are recommended by medical authorities of the British Army. Rejection of the puttee is advised, as it has been found unsuitable for trench warfare and is not used by the French Army, where trench-foot does not prevail to so large a degree.

"The mucous membrane of the nose and throat, like that of the bowel, is merely

steps in disease prevention. Here, caution must be exercised. Some people seem to be able to jump into ice water, and react well to the shock. But in others this would cause congestion of the kidney. A cold spray to the neck and chest, especially the back of the neck and along the spine, is a simple measure that is usually safe and effective. A hot spray

THE WORLD'S WORK



SPARTAN MEASURES UNNECESSARY

The vigorous methods employed in the treatment of tuberculosis, as above, are not to be employed in building up run-down men. Winter bathing of such organizations as the "Polar Bears" or "Snow Birds" in icy water will do the run-down man much more harm than good.

or douche, taken while standing in about a foot of cold water, followed by a cool or cold spray of a temperature that leaves one feeling a comfortable warm glow, is a good skin-training measure.

"Brisk rubbing of the skin with a coarse

towel, and calisthenics before dressing will increase the benefit. An air bath or exposure of the skin to cool air for a certain time each day, is also helpful. Fresh air in the bed room is all-important but beware of bare feet on a cold floor.



FRESH AIR SHARPENS THE WITS

The children in fresh air schools or in schoolrooms where the windows are kept open the year round have been found to be quicker to learn their lessons and freer from colds than pupils in warm rooms.

THROUGH BELGIUM AND AUSTRIA— UNCENSORED

EXTRACTS FROM THE DIARY OF AN AMERICAN WOMAN WHO RECENTLY VISITED BOTH
COUNTRIES

BY

ERNESTA DRINKER BULLITT

BRUSSELS, July 21st—Leaving Berlin on a night train is a hopeless nuisance in war time. There are almost no cabs, so one must order one hour ahead

and, if it comes, as ours did, one must go and sit an eternity in the railroad station. There we met Excellenz Coates waiting, as he was destined to do for the next week, for the Bullitts to arrive. On Billy's attempting to tip the porter, Excellenz interrupted: "Excuse me," said he. "You are now the guests of the German Government," and the porter received a portion of his own good tax money back from the hands of its collector. I must say our surprise was great; we had not expected this. When one travels as the guest of the Government, things are luxurious and easy. One goes first class and one is treated with marked respect, particularly if one has an Excellenz in uniform along; soldiers, who are everywhere, form into stiff lines of salute, and smile instead of scowl. I shall never cease to be amused at the way in which a man is transformed on the approach of an officer into a rigid, staring object, ferocious of eye and terrifying of aspect. I do not remember having seen American soldiers salute, but I am sure they are temperamentally incapable of any such performance as the German soldier automatically undertakes on the average of thirty times a minute.

After a night's journey, we got to Cologne. The station was swarming with men in field gray. Most of the uniforms were dirty and worn, and the men's boots were muddy up to their knees. They were eating at tables on the platforms, or squatting on the floor by their kits; companies were getting into trains, or standing

about the waiting rooms. They looked healthy and sunburned. Where they had come from, and where they were going, one did not know, for the German Army moves secretly and ceaselessly.

Shortly after leaving Cologne, we got into Belgian territory. From the border to close upon Louvain, one could not tell from the train that Belgium had ever been invaded, were it not for the German sentries by the railroad track and the soldiers in the railroad stations. The country is covered with grain fields and vegetable gardens, all under strenuous cultivation. Many cattle are grazing, and the villages look quite as in normal times. On approaching Louvain, one begins to see destroyed villages, burned châteaux, and half-demolished factories. Brussels, itself, which we reached at three in the afternoon, is not touched, as it was surrendered peacefully. Soldiers, of the moth-eaten *Landsturm* class, spread themselves pretty successfully over the city, beginning with the entrance to the railroad station.

At the Hotel Astoria we were given a bed room, sitting room, and bath, accompanied by a Belgian valet, who showed signs of joy when he learned we were Americans. He confided to me that his little girl had been lost since the beginning of the war, and that he had spent all the money which he had saved up for his old age in traveling around trying to find her.

"And after the war," he continued, sadly, "I shall have no money left to go to France and hunt for her there."

The Belgians are now perfectly well behaved under German rule. Any sign of disrespect is heavily fined. Belgian policemen salute German officers, Belgian storekeepers and restaurants have Germans as

constant customers, but all social communication is entirely cut off; the line is drawn here absolutely and finally.

Americans are very popular. We had only to say, on entering a shop, that we came from the U. S. A., and smiles greeted us from behind counters, like a sunrise. If we were with a German officer, their attitude was quite different, polite, unsmiling, and cold, although the German officers treat them with perfect courtesy. Billy went into a little shop to buy chocolate the day we arrived. The Major and I stayed outside and looked in the window. The proprietress scowled, and handed over a cake of Suchard. Suddenly her face was transformed. Billy had told her he was an American.

"*Oh, les Américains!*" she cried, "we are so grateful for all you have done for us."

We went, the afternoon of our arrival in Brussels, to the press office, where we met Count Harrach and Baron Falkenhäusen. Harrach is in charge of the press in Belgium. He is a man of the type it would be well to have many of in any country. We both like him immensely. By vocation, he is a sculptor, but he seems to have switched from marble busts to newspaper editing and press censoring with little trouble.

We dined at the Epaulé de Mouton, Coates, Harrach, Billy, and I. Harrach told us of the entrance of the German Army into Malines, early in the war.

"I came in ahead in a military automobile," he said. "The town was deserted and silent. Every citizen had fled. It was like some city in a fairy tale. Shops open, wares displayed, homes looking quite normal, but not a soul anywhere. The silence was startling in its intensity. I drove straight to the church, where I knew there were two Rubens pictures. These I wished to take to some safe place, but they were gone; the Belgians had taken them out of their frames and hidden them or carried them with them in their flight."

Since Harrach described the city, we have been there ourselves. Now the people have come back and life seems quite normal. There is very little destruction. An odd shell fell here and there and blew

up the house in those spots. Across the Plaza from the Cathedral, most of the destruction took place. Here, half a block is knocked to pieces. The windows of the Cathedral are nearly all shattered as a result of the vibration. Some few shells came through the roof, or the walls, and the holes have since been filled up with brickwork. The main part of the building is not greatly damaged. It looks, however, a good deal pounded up, and artificially antiquated.

We wished very much to see Cardinal Mercier, Archbishop of Malines, but were not allowed to by the Major. Naturally, it would be rather contrary to German interests to have one of the most famous of Belgian patriots give us a few of his views on the German occupation, so we understood perfectly their not wishing us to talk to him. The Germans told us, quite frankly, that they had not brought us here to talk to Belgians.

LOUVAIN, TWO YEARS AFTER

June 25th, Louvain—Louvain we saw from a joggly dog-cart, in company with the ever-present Coates, and General Löwenfeld, Military Governor of Berlin and aide-de-camp to the Kaiser. Coates, owing to our frenzied expeditions about Belgium, has added fifteen years to his sixty-two in the last few days. The unfortunate man had orders to accompany us everywhere, and the pursuit of his duty nearly killed him. I felt exactly as if I were back in Paris at school, and Billy chafed at the surveillance, but we were both amused.

Louvain is decidedly pounded up, but it is not horrible. Two years have made a difference in the disorderly work of the German cannon and incendiary department of their army. Only one fifth of the city was destroyed, but that fifth happened to contain most of the University, and the residential section where lived Louvain's best. The City Hall, of extreme Gothic ornateness, stands untouched amid the ruins of the Library and surrounding buildings. The Cathedral lacks tower, the famous chimes, and much of the masonry, as well as interior decoration. Rubbish lies in heaps on the stone floor.

which is itself upheaved in spots. The old sexton, who showed us around, shook his white head mournfully.

Young Dr. Rieth told us he knew the officer well who directed the destruction of Louvain.

"He told me," said Rieth, "that he had had no idea there was a library in the town, that if he had he would not have dreamed of burning it; he would have saved it as he saved the City Hall, by blowing up the surrounding houses. The citizens did not speak to my friend about the Library until the building was too far gone to save."

All the deliberate damage, or frightfulness, in Belgium was done in three days, and the dates were August 24, 25, and 26, 1914. The German explanation is this: They could not have the repetition of civilian warfare which they met in France in 1870. That had been much too inconvenient to the German Army. They decided, if resistance was made by the civil population in the shape of *francs-tireurs*, that the punishment would be swift and sure. It was. Von Bissing told Billy that the destruction of Louvain was really a very good thing for Brussels, as it taught them what would happen to them if the people started to get fresh with the German Army! Not a stone in the city was touched; but one woman, of whom the world knows well, was. We have not mentioned Miss Cavell.

Namur, and Liège, which I had pictured as razed to the ground, are intact, except for a few houses. At Namur, the forts have been rebuilt, and the bridges, which the Belgians themselves blew up, have been reconstructed.

In the country, one motors for miles and sees nothing out of the common. Then, suddenly, there is a village with the inside of every house scooped out. The village two miles away is intact, then come scattered ruins and odd graves by the roadside.

"IN THREE MONTHS"

As for Brussels itself, it seemed to us, who had been in Berlin for six weeks, a gay and cheerful place. That we saw no Belgians certainly did not detract from the impression, though I think they are, in

spite of all, a gayer people than the Germans. In the park on Sunday, boys and girls were playing football and other games, and shrieking with delight as they capered about. The children romped unsubdued on the grass, while dogs rushed up and down barking with an abandon no German dog would have understood. Billy, Count Harrach, and I were out together for an afternoon in the woods. We stopped and laughed long, thinking, as we watched the Belgians play, of how we in America had pictured them, starving and dejected. But this spirit of fun does not conceal the bitterness the Belgians feel toward the war and the Germans. The knowledge that they are a conquered people makes them bitter, but never kills their hope. Their confidence that the English will soon be back to rescue them never dies. The waiters, the store people, the barber who washed my hair, all said: "In three months!" (They have said "three months" since the war began.) They think the English are gods and tell you stories of their bravery. A Belgian friend of Phillip Platt said that one day he watched from his window a single Englishman hidden behind bushes. The man had a pile of ammunition and a machine gun. He shot and shot and shot, and the Germans could not find him. When all his ammunition was gone, he sat on a stump and lit his briar pipe, smoked a while, and then crawled back and jumped into the river.

The point of view of the Germans in Belgium is different from that of the Germans at home. In Germany, the opinion of statesmen and business men seems strongly against annexation or retaining any hold on Belgium. The contrast of the civil as against the military opinion shows when one talks to those now in charge in Belgium. The Government in Belgium is, of course, strictly military from stern old General von Bissing down. Most of these men fought through the country they are now ruling and they feel differently about letting it slip away. The mildest say: "Well, in any case, it will not be as before the war." Others want a free Belgium, "but with some sort of supervision, you know. If she is given

absolute freedom, she would only become England's pawn again." More want an indemnity, instead of paying one themselves, as they talk of in Berlin. The point is, they do not want to lose their hold on the country. Some would charge Belgium a heavier toll than it is paying now. The \$8,000,000 a month only covers half the cost of governing and maintaining an army in Belgium. The man in charge of Tournai said that 10,000,000 marks of German money came into Belgium over and above the 40,000,000 marks which were paid to Germany each month.

I asked an officer if there was any supervision of the schools by Germans.

"Unfortunately not," he answered. "We should have it, as the Belgian schoolmasters do anything but teach affection for the Germans. If we keep Belgium, we shall of course supervise the schools."

DINNER WITH VON BISSING

Berlin, August 1st.—On our last night in Brussels we dined with General von Bissing. The dinner for some peculiar reason was given for us. At 7:30 the gray motor, painted in three places with the German coat-of-arms a foot square, called for us.

Half an hour's run, and we came to the park of the château of Trois Fontaines; a well laid out drive through big trees soon brought us to the square white château, with its broad stone steps leading up from either side of the terrace to the door. The hall was filled with officers. One very glorious looking person took me in charge and introduced each man to me. They clicked their booted heels together and kissed my hand. This audience over, the Governor appeared. He is seventy-two and looks sixty. His face is stern, yet not unkind. On finding I spoke no German, he changed to careful French, beginning with the not too original question:

"How do you like Belgium?"

I said I thought it was getting along very much better than I had had any idea of. He laughed and offered me his arm to go into dinner. Billy followed with Countess Mengerson.

Through the hall and front drawing room we marched into the white-paneled dining room, the parade of officers follow-

ing. The servants behind our chairs were soldiers in field gray. I felt as if one of them should stand in a corner and bid the order to commence eating, on a bugle.

I had had instructions from every officer in Brussels to talk to the General about his sack factory and the industrial exhibit, and the Hospital of Saint Gilles, so I dove in without waiting to taste my soup. As a matter of fact, it was no effort to tell the Governor that they had interested me hugely, for it was quite true. I highly approved of his giving the people work, and no one could but admire the hospital.

"I have a lot of pity for these people, who were not responsible for starting the war," he said.

"Are you going to let the cattle go to Northern France?" I asked.

"No," said he.

"Are you the man from whom the order comes?"

"Yes, but I refused this afternoon to let the cattle go out of Belgium."

"Why?" I asked.

"They don't need them in France; they have enough to eat."

"But they have no animal food at all," I said. "No eggs, nor milk, nor meat." Mr. Kellogg, of the Belgian Relief Commission, had said so, and he knows what Northern France has to eat as well as he knows the alphabet.

Non, je ne peu pas ("No, I cannot,"), said the General.

I said no more as I was afraid I might get the Commission into trouble through meddling in their affairs.

PLANS FOR FEEDING BELGIUM

I was greatly interested to hear that he, Von Bissing, had made plans for feeding the Belgians from their own soil if the Commission had to leave and if no other neutral country could carry on the work. England probably wouldn't trust the Dutch, and the Spaniards wouldn't have the business ability.

"Yes," said Von Bissing, "I am convinced it would be possible. The people would not have enough to eat, but they would not starve."

Perhaps this might be possible if the

harvest were good, but the weather is a tricky friend.

After dinner we moved to one of the drawing rooms. Billy talked with Von Bissing the rest of the evening, and I sat on a long lounge with Harrach, Von Lanken, Count Mengerson, and Dr. Rieth.

At ten, the motors were announced and we all said good-night.

CARDINAL MERCIER

In July, on the National Fête Day of the Belgians, Cardinal Mercier said Mass in the Brussels Cathedral. Saint Gudule was crowded and still. Permission had been given for the singing of the Brabanconne. The Cardinal, who knew his people and the orders of the German Government, had sent word that there was to be no demonstration. At the end of Mass, the great congregation took up their national anthem. They sang it through, and at the end, the old Cardinal walked out among his priests and choir boys. His hands were folded, like the pictures of a praying saint, his eyes looked straight before him, and tears streamed down his face. The people, perfectly well behaved until now, broke into cries of: "Vive le roi! Vive le Cardinal Mercier!" The old man is adored by his people. To show their affection, they disobeyed him, for which I doubt if he thanked them.

That evening, as his carriage drove through the streets to the station, the holiday crowd again took up the cry of, "Vive le roi! Vive Monseigneur le Cardinal!" A fine of a million marks was imposed for this celebration. The people knew they would be fined if they did this kind of thing, but evidently they thought it was worth the price.

At the end of a street, on which all but German soldiers are forbidden to go, is a statue, symbolizing Belgium, free and independent. All day long the men of Brussels walked past the street, looked up toward the statue, and lifted their hats. The women bowed. Each passer-by wore a piece of green ribbon, and the green meant "Hope."

A year ago, on the National Fête Day, the Belgians closed their shops. This they were forbidden to do again under the

penalty of a heavy fine. The shops were kept open, but no wares were in the windows; the proprietor sat in his back room with his feet upon the mantelpiece and his back to the door, smoking a pipe.

Berlin, August 4th—Every one congratulated us on our trip to Belgium; they say it is quite unique, particularly my having been allowed to go.

August 5th—The *Berliner Tageblatt* has been suppressed for several days as the result of printing quite the most sensible article on peace that has as yet been published. The author suggested, among other things, that annexation was rot and that some idea of permanent peace should come out of the war. (I wonder what jail he is in!) Isn't it wonderful how free the "press" is in Germany?

The rain has stopped and the harvest will be good, after all.

August 9th—Stopped in to see Countess Götzen. She had just come up from lunch.

"Well," she began, "the waiter brought me a piece of beef to-day which I couldn't recognize the cut of for some time, and I've been a housekeeper for thirty years. I looked at it and I said to myself, 'Now this isn't the leg and it isn't the rib, and it isn't the shoulder.' Then I said, 'I know what it is, it's the tail! And what's more, it isn't a cow's tail—it's a horse's tail!' So I called the waiter. 'Now waiter,' said I, 'I am not complaining, this is purely a matter of interest, but I want you to take this piece of meat to the chef and ask him if it is not a horse's tail.'"

"In a few moments, the man came back, red to the roots of his hair, and said: 'Madam, it is a horse's tail!'"

Thank Heaven, say I, that I am no longer staying at the Esplanade. Frau Krause does not give us such things to eat!

August 19th—Deliver me from efficiency, and save me from the hand of mine enemy, the police! Peacefully and unobtrusively did we wish to travel tomorrow to Vienna, and we discover that the simplest way in which it is to be done is to visit ten police bureaux and a consulate, in none of which does one do any-

thing but wait for hours, and then get asked one's age! If they don't ask how old you are, they tell you that you are in the wrong bureau. The right bureau is two miles away and there are no taxicabs. When you get to the right place, they tell you it closes in five minutes and that seventy-five people are ahead of you, so you must come the next day, but it is Sunday, so you have to wait till Monday, as the police stations are closed.

Horter, Osborn, and Herr Horstmann were waiting at the Bristol for us. We poured out our woes and attempted to exaggerate, but couldn't. Herr Horstmann, being most sympathetic, said if we'd write down an account he'd send in a complaint from the Foreign Office. I decided it was useless to try and be patient with a German policeman. It doesn't do any good, but swearing might relieve the feelings. He is too used to having the subdued public be polite to him; he doesn't notice it. If you make a noise and tell him he is a worthless idiot, he may think you are a superior officer and do something for you.

Herr Horstmann said he'd write and tell Prince Festetics and Prince Hohenhofs to come and see us when we're in Vienna, also some other friends of his whose names I don't remember. He is awfully nice about doing that kind of thing. When we went to Belgium, he wrote to people there. He always wants us to have a good time.

Billy saw Helfferich in the afternoon. Helfferich is not impressive to look at, but he is the cleverest man in the Government, and one of the five men who run Germany. He said Germany could go on indefinitely as far as food was concerned, and that the harvest was from 25 to 30 per cent. better than last year. The country will be far better off this coming year for food than last year. The bread rations will probably be increased, and the cows, owing to better food, will produce more milk.

As to peace terms, he said that one of the first would be the abandonment of the economic war against Germany. He said he did not like to say much about indemnities, as it made their opponents foam at the mouth to hear the word, but that, if Germany was in a military position to

demand them at the time peace was to be concluded, it should certainly take them. He went on to say that there were only two ways of getting the Germans out of the territory they now held—one was to drive them out, the other to buy them out. He said this war was too complicated to be able to say what they wanted. He also said that they would insist upon England's guaranteeing the freedom of the seas for neutral shipping. This, he said, was not only necessary for Germany but for all neutral nations.

He said it was impossible now to say whether England and Germany could come together after the war. Lasting peace for Germany means to him strong frontiers and a strong army and navy, not an alliance with other nations.

DELIGHTFUL AUSTRIANS, BUT SLOW!

Vienna, August 23d—The luggage examination when we entered Austria was of a superficiality that charmed our American souls. They scrambled through the trunks without making a mess, they ran their hands about the linings of our coats and hurriedly looked in the bottoms of our shoes, and still we conceived a great affection for them. When I heard a man say, as he rushed by a guard, that he hadn't time to show his ticket, I realized that Austria was nearer home than Prussia.

The Hotel Bristol, where we are staying in Vienna, is peopled with everything from the William C. Bullitts to the Archduke Franz Salvator. In luxury it is the last word. In our room, you can telephone, turn on the lights, open the door, and ring for three different variety of servants from any spot in which you happen to be at the moment.

We called at the Embassy the morning we arrived and presented our letters of introduction from the Berlin Embassy. The Penfields were away, but Mr. Grant-Smith and Mr. Dolbeare were most cordial. Mr. Grant-Smith began by telling Billy that the Austrians were the most delightful people imaginable, and that no one ever was able to find out anything about them or the situation. He said the Embassy didn't know anything and nobody else did either. That sounded rather discouraging.

out we didn't despair. After that, every one we met told us the same thing: "Delightful, charming, sympathetic people, but slow as caterpillars; it is impossible to hurry them."

We drove, that afternoon. When we got into the cab, the driver said it was forbidden to take a cab for sight-seeing, but that he would take us to a café by a long circuit and there we could drink a glass of wine and come home by another circuit. His, not being a Prussian, conscience was quite satisfied by this evasion of the law. We made our *détour* rejoicing, our fondness for the Viennese increasing at every block. Vienna seemed so gay after Berlin, the women are pretty and well-dressed, the soldiers salute and still retain a human expression, the pedestrians look as if they took a real interest in life, and we began to feel nearer home. It is a common saying that the Austrians are pessimistic but gay, and the Germans optimistic but glum.

In the evening we dined with Greene and Foster, of the Rockefeller Relief, and Dr. Ryan, one of the chiefs of the American Red Cross in Serbia. Ryan has had so many adventures that he wouldn't notice anything less than getting killed now. I asked him if he'd seen much typhus in Serbia.

"Yes," he said, "I had a hospital with two thousand patients in it, most of them typhus cases."

"Did your staff get the fever?" I queried next.

"Well, I was the only doctor," said he, "but six out of my twelve nurses got it."

"Were you inoculated?" I still continued, blithely.

"No," he answered. "I didn't need to be—I had the typhus."

"Tell her about your trunk," said Foster.

"I was coming to Budapest," said Ryan, obligingly, "and, as I was operating all day, one of my nurses packed my things. I had a souvenir trunk. When I got to Pest, the men dropped it on the platform and it blew up. The nurse must have packed a grenade in with the other things. It wounded three men and I was in an awful mess."

"Did they arrest you?" asked I.

"Yes," said Ryan. "Fined me 20,000 kronen. [\$6,000] too, but they let me off later. The men sued me for damages, too."

IN BUDAPEST

Budapest, August 28th—One does not have to be here in Budapest very long to discover a decided bitterness toward Austria. They say that the Hungarian troops are always put in the front trenches and that the Hungarian losses are proportionately far greater than the Austrian losses. We find that here, as in Austria, there is no love for the Germans. They respect and admire them and trust them, but affection for them they have none. Of their fondness for France, they speak continually. They do not fight against her and they worry continually over whether the French will hate them after the war and not allow them to visit France.

The Hungarians have suffered enormously in this war; their losses have been cruel, but the lightness of their spirit is still there. It's a quality which makes one love them—this power of being able to laugh in the midst of sorrow.

August 30th—Count Albert Apponyi came in to-day. He is one of the finest people I ever met—tall, with gray hair and a gray beard and moustache, a lean figure, and a high-bred boney face—he looks rather like a very aristocratic Uncle Sam, and his manners are like Colonel Newcome's.

"I am not wanting in hospitality," said he. "I got home only last night or I should have come before."

After all, one does not expect one of the busiest men in Hungary to call on two young people of whom he never heard before, but the Hungarians are really the most polite people I ever saw.

Billy had an interesting talk with him. He takes the entrance of Rumania into the war very seriously, but says it will spur the Hungarians to harder fighting. He thinks the "ungentlemanly" way in which Rumania attacked has stirred the people to real fury. Of Germany, he said: "One of the best things we have in this war is the realization that our great ally

will stand by us with all his forces and be faithful to the death. And we two, Austria and Hungary, do not consider for one moment making a separate peace which would save our own skins but sacrifice our ally. Hungarians are not Italians or Rumanians. We do not break our word."

This is a thing one feels strongly in Hungary. They have a high sense of honor, and there are certain things which they agree it is better to die than do.

Apponyi thinks Andrassy should replace Burian as joint foreign minister. Not to have an Ambassador in the United States he declares to be absolutely wrong.

"President Wilson wants one and has offered to send a warship for him," said he.

Count Andrassy told Billy that Apponyi himself should be sent. Certainly America would be the gainer if this should be, and Austria-Hungary would be better represented than, to my knowledge, she has ever been.

Vienna, September 2d—Turkey and Bulgaria have declared war on Rumania. It was the only decent thing for them to do. The refugees from Transylvania are already pouring into Hungary, and the Rumanians are advancing fast. On Friday night, at dinner, Count T., of the General Staff, told Billy that there were only eight thousand troops protecting the Rumanian border when Rumania declared war. Many here think that they will be able to drive this new enemy out in a few weeks—the chances of this seem slim now.

We leave for Berlin day after to-morrow. It will be queer to be under severe regulation again. If any one asks for a bread-card here, one acts as if one were insulted and the waiter apologizes profusely and rushes to bring the bread. We asked them how they could afford to serve so much food, and they said: "Oh, we can't economize like the Germans. We will eat until there is no more food, and then we will stop, but we can't make ourselves miserable with thinking about it all the time."

Berlin, September 16th—Flags were out a week ago for the first victory over the Rumanians. There is another reported

to-night which seems to mean a far greater victory. That the English and French have made gains is only to be expected, as Hindenburg's policy, like Napoleon's, has all along been to whip the weaker enemy first, and hold the stronger with a weakened force. For the few miles he loses in the west, he will probably gain hundreds in the east, whither the General Headquarters have been moved.

September 17th—Have to send my diary to-morrow to the Foreign Office to be censored, so I shall not be able to write any more. All our papers have to go ahead of us to Copenhagen by the courier from the Foreign Office. I do nothing but take things down there. We have volumes of pamphlets, all Billy's notes, books of statistics, etc., not to mention my *magnum opus*. Yesterday I told Dr. Rodiger that if he cut a word out of it I should come back and finish him with an axe. He promised that it should not be touched. Poor man, we do give him so much trouble and he is so nice about it! As a final piece of impudence, I handed in what was left of the box of hair tonic we had recovered from the frontier. They are sending it! I think the German Foreign Office is most obliging.

Billy has just had a second long talk with Von Jagow. Food is getting scarcer. You are supposed to get only one egg a week. No more butter is served on the table, which makes breakfast rather dreary, and milk cannot be bought for children more than six years old except by a doctor's prescription. The city is making plans for Municipal Kitchens on a large scale.

Copenhagen, September 28th—They behaved beautifully to us at the frontier. We found all our things here from the Auswärtiges Amt. It must have hurt the censor's feelings cruelly to let my diary by. He put crosses and exclamation points down all the margins. Billy's notes were cut to ribbons, and he is in a rage.

Now I have come to the end. I am going to America, and that is the only thing in the world that matters to me to-day.

HOW THE U-BOATS THREATEN OUR PROSPERITY

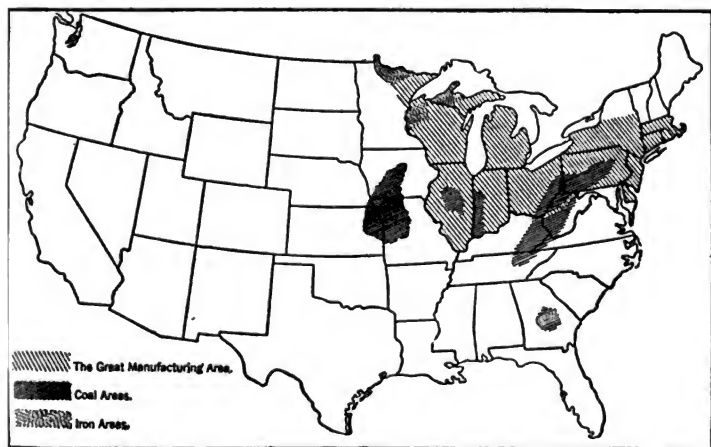
THE PROSPERITY OF THE WHOLE COUNTRY DUE TO EXPORTS—THE FARMER, MANUFACTURER, AND CONSUMER THREATENED ALIKE—OUR DEPENDENCE ON IMPORTS; RUBBER, CHEMICALS, FERTILIZERS, ETC.—WHAT SUSPENSION OF FOREIGN TRADE WOULD MEAN

IF THE German submarines should even approximate their threats of stopping traffic to England, France, and Russia, it would practically also amount to a prohibition of American export trade. This would immediately have a direct effect upon almost every community in the country as well as the general effect of a depression and probably panic. Our prosperity is largely measured by the fact that, in 1913, our exports amounted to \$25 per capita and, in 1916, 60. Sixty per cent. of them go to England, France, and Russia.

A study of the sources of these exports shows that they come from practically

every section of the country. Grains, cotton, cattle, mules, and horses cover nearly the whole country. All these commodities constitute large items. The copper from Montana and Arizona is as important to these states as iron or steel to Pennsylvania and Ohio. The export trade in flour affects Minneapolis, Minn., as the export trade in shoes affects Brockton, Mass. The accompanying maps show in the main essentials how widespread is the interest in our exports and the freedom of the seas from submarines.

What the crippling of this trade would mean for the agricultural states in particular is suggested by the drop in the prices



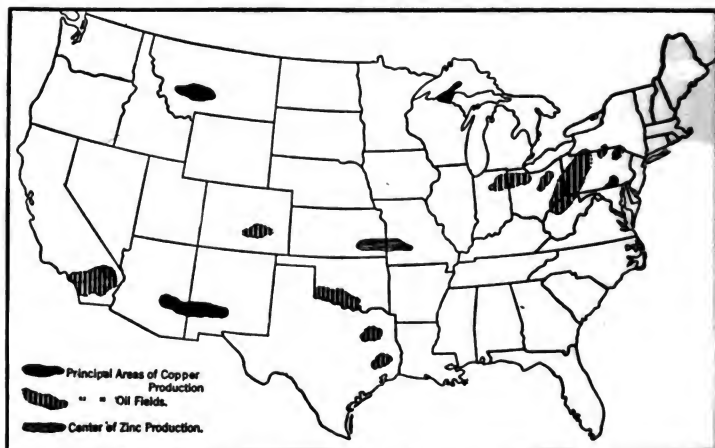
MANUFACTURING AREAS OF THE UNITED STATES

The extent of the stimulus of the war in the iron and steel industries is shown in the value of the exports of pig iron for last year, \$13,000,000, and of billets, \$87,000,000, which, prior to 1914, were exported only in negligible quantities. Germany's effort to cut England and France off from the essentials of warfare, if successful, will cost us most of this trade, and cause immense losses to the laborers in most industries and to the stockholders in most corporations



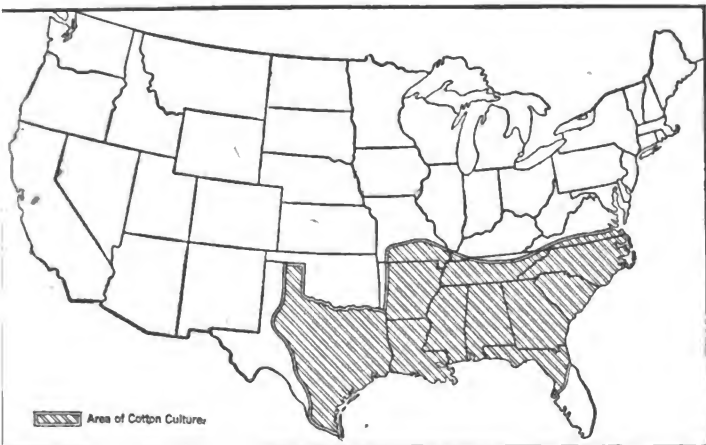
THE FARMERS' AND FISHERMEN'S SHARE OF EXPORTS

If Germany succeeds in cutting off England from obtaining food supplies from the United States, she will have won the war. In 1916, the United States exported \$22,000,000 worth of fresh beef, \$77,000,000 worth of bacon, \$42,000,000 worth of hams, \$83,000,000 worth of horses and mules, and \$18,000,000 worth of fish—chiefly to the Entente Allies. Germany's U-Boat campaign directly affects the market of the producing farmers and fishermen in the shaded areas



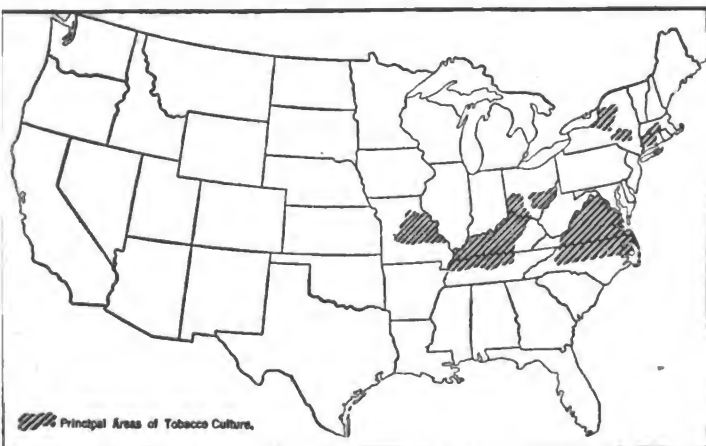
COPPER, OIL, AND ZINC PRODUCTION

Three essentials to modern warfare which we are supplying to the Allies. Last year, American exports of copper and the manufactures of copper and of the products of the oil fields were more than doubled, while zinc exports increased about ninefold, as compared with 1914. Enormously profitable industries, employing many thousand laborers, are threatened by the submarine campaign



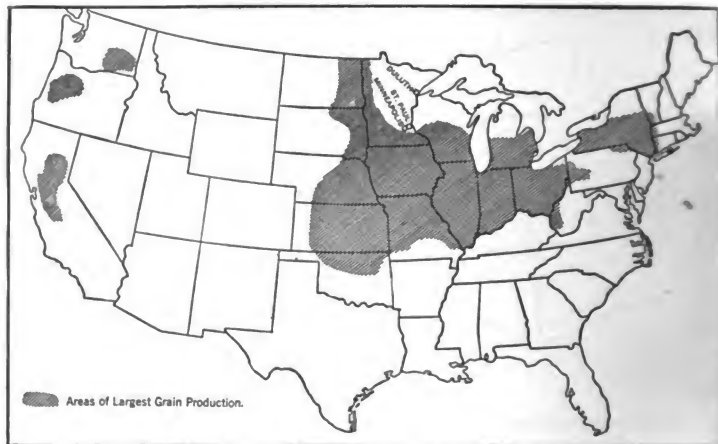
COTTON CULTURE IN THE UNITED STATES

Last year our exports of manufactured cotton almost doubled those of 1914. Exports of raw cotton were \$510,000,000 and manufactures of cotton \$130,000,000; one good reason why Germany is anxious to stop cotton getting to England is that it is used in the manufacture of clothing and munitions. The cost to the South of a successful German blockade is shown by preliminary decreases of \$18 to \$25 a bale in the price of cotton



AREAS OF TOBACCO CULTURE

Tobacco for the soldiers at the front has become almost a necessity, a fact which must be taken into account in considering that manufactured tobacco produced in this country last year was valued at \$10,000,000, and unmanufactured tobacco at \$65,000,000. Exports of both were 45 per cent. greater than in 1914. The shaded areas face the loss of millions in revenue if Germany stops our trade with Europe



GRAIN PRODUCTION OF THE UNITED STATES

Exports, in 1916, of the five principle crops (wheat, corn, oats, barley, and rye) amounted to about \$360,000,000, about 75 per cent. more than in normal years. Exports of wheat flour were about 15 per cent. above normal. For the purpose of cutting England off from these necessities of life, Germany has thrown discretion to the winds and entered upon her career of ruthless submarine warfare. Her success means the end of dollar wheat in the Northwest and other grain regions.

of cotton and wheat—one of the most violent in the history of the market for either of those commodities—which followed immediately upon the heels of the announcement of Germany's new policy. The decline in cotton was the equivalent of \$18.75 to \$25.90 per bale, while wheat dropped precipitately 15 cents per bushel.

The significance of the new situation for the industrial states is indicated by the fact that during the latter part of 1916, exports of steel were running about 22 per cent. of the total production of the industry. In many other industries, the proportion of exports to total production has doubtless been much greater than that.

But our concern is by no means all on the side of our export trade. A situation of this kind contains serious possibilities concerning imported commodities, which enter into the daily needs of the people, and for which we are absolutely dependent upon

foreign markets. Take rubber, for instance. We imported last year nearly \$165,000,000 worth of the crude article, approximately two and a half times the amount brought in during 1914, but not enough to meet all our requirements with ease. Among the other important items on the import side of the balance sheet last year were: hides and skins, \$173,000,000; chemicals, drugs, and dyes, about \$120,000,000; vegetable fiber, manufactured and unmanufactured, \$135,000,000; mineral and vegetable oils, \$55,000,000; tea, \$20,000,000; undressed furs and skins, \$18,000,000; wood pulp, \$21,000,000. The German submarine blockade, if successful, would not deprive us of all of these, but, even an approximate success, would so reduce the amount of the world's shipping that we who control little of it would find our imports as well as our exports badly crippled.

DEMOCRACY AND THE PRINCIPLE OF NATIONALITIES IN THE BALKANS



ON JANUARY 22d President Wilson said in his speech before the Senate:

"No peace can last or ought to last which does not recognize and accept the principle that Governments derive all their just power from the consent of the governed."

This is in accord with the principle of nationalities, one of the cardinal points of the Allies' programme, which means that a solid group of considerable numbers of one race should not be unwillingly held under the rule of another race.

The difficulty of applying these principles

is shown clearly by the racial map of Southeastern Europe. It would mean the end of the Dual Monarchy and the redistribution of the Balkans in some such divisions as suggested above—and this map very much minimizes the difficulties, for in each division there are scattered many people of other races.

Europe has endeavored to find some peaceful settlement of this situation which precipitated the Great War, and however the war comes out, there is no plan that insures even the reasonable satisfaction of all the Balkan peoples.

WHAT CAN GERMANY GET OUT OF PEACE?

WHY GERMANY MAY ABANDON ALL IDEA OF A CRUSHING VICTORY OVER THE ENTENTE POWERS, AND THE CONCESSIONS SHE WOULD PROBABLY MAKE IN ORDER TO REALIZE HER DREAM OF A PAN-GERMAN EMPIRE, INCLUDING THE BALKANS

BY

BURTON J. HENDRICK

WHY is Germany so desirous of concluding peace at the present moment? The usual newspaper explanation is that the Central Empires are reaching the end of their resources, in materials and men, and especially that they are suffering keenly from the lack of food. The recent statement of Herr Zimmermann, the German Foreign Secretary, that Germany could hardly risk publicly stating her terms, because their extreme liberality would be interpreted as a sign of weakness, fairly indicates the pressing character of conditions within the German Empire. What are these exceedingly liberal terms?

The details that first come to mind are the cession of Alsace-Lorraine to France, the restoration of Belgium with indemnity, the surrender of the Trentino to Italy, and the abandonment of all occupied territories, perhaps with indemnities for damages inflicted. It seems reasonable that Germany would consent to certain of these arrangements but hardly to all of them. That the Kaiser long ago abandoned any idea of a crushing victory and pinned all his expectations upon a "drawn game" is the conviction of most intelligent observers. Yet precisely what is the German conception of a "drawn battle?" What would the Teutonic Powers obtain? What would the Allies get? How would the map of Europe look after a peace based upon this fundamental idea? So far all of President Wilson's efforts have failed to obtain an answer to this all-important point.

But several voices are now being raised

against the "drawn battle" theory of peace. A volume recently issued in Paris, "The Pan-German Plot Unmasked," by André Chéradame, published in English with a preface by the late Earl Cromer is intended to warn the world against a peace which has been put together on the "drawn battle" idea. Simultaneously a more remarkable book on "Mittel Europa," by Friedrich Naumann, pronounced by Prof. W. J. Ashley, of the University of Birmingham (England) "far and away the most important book that has appeared in Germany since the world conflict began," confirms many of the conclusions set forth by the more impassioned Frenchman. These two volumes, both discussing the same subject, one from the German and the other from a French viewpoint, have the utmost bearing upon the subject which is now most engrossing the mind of civilization: What does peace, based upon a system of give and take, mean to the world?

In particular, what can Germany obtain from such a peace that may conceivably compensate her for the agonies of the present conflict?

The phrase constantly used by Naumann—who is a member of the Reichstag and one of the greatest and most influential German writers on political and economic subjects—explains the whole war and explains the peace for which the German Empire is now struggling. The phrase, "Mittel Europa," forms the title of the book—translated "Mid-Europe" or "Central Europe." Most Americans have heard this term frequently in recent years—even before the war—though few have had an

definite idea as to its meaning. A slight glance at the map, however, makes the whole thing clear. Herr Naumann describes Central Europe in a picturesque way of his own. Like most German intellectuals he has no illusions about the future of war, nor the slightest idea that the present conflict is to usher in a Wilsonian millennium of peace. The "keynote" of his present preaching is the necessity for the most elaborate preparation for the war which is to follow the present one.

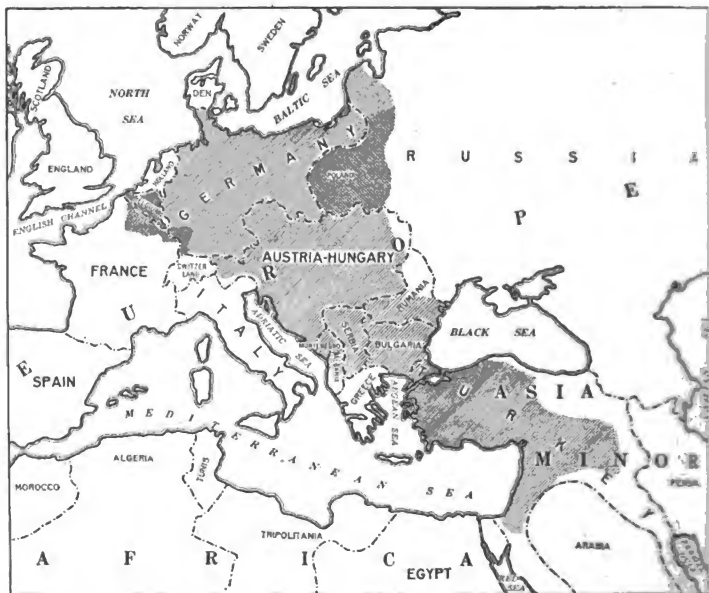
THE EUROPE OF THE FUTURE

Quite naturally, therefore, his description of the new Europe assumes a military character. This conflict having demonstrated the uselessness of fortifications and antique methods of defense, it is inevitable that future preparations will be based upon trench warfare. Instead of building fortresses, the nations will build an elaborate system of frontier entrenchments, and will keep them in constant readiness for occupation. The future Europe will contain "a system of Chinese and Roman walls, made out of earth and barbed wire." Two huge trenches in particular will stretch, one from the lower Rhine to the Alps, one from the Baltic about Riga to the Black Sea, enclosing part of Poland and possibly also Rumania, though any attempt to define the precise course of these new defenses is useless, as the terms of peace will settle that. But these trench frontiers, built in the most impregnable style and constantly ready for the reception of soldiers, will clearly split continental Europe into three parts. We shall have Western Europe, consisting of France and Spain; Eastern Europe, comprising Russia, and the section between, accurately described as "Mittel Europa" or Central Europe. This last grand subdivision will contain the present German Empire, with possibly Holland and Belgium, Austria-Hungary, the Balkan States, and Turkey—though, significantly, Herr Naumann only hints at the inclusion of these latter countries. Now the question that chiefly concerns the future of Europe is whether there shall be a third frontier trench, extending east

and west, and tracing the present boundary line of Austria-Hungary and the German Empire. That is, whether Germany and Austria-Hungary are to comprise a political and economic entity, or whether, after the war, they are to maintain separate existences, perhaps not continuing the alliance that has existed for more than thirty years and possibly even opposing each other. The question is thus whether a new state, "Mittel Europa," with Austria-Hungary and Germany as the predominant and federated partners, is to develop out of the present international welter—a development which Herr Naumann regards as absolutely essential to the existence of both the central monarchies. That is, the alternative facing Germany is this new state of "Mittel Europa" or disappearance as a great World Power. "The war," he says, "has come as the creator of the Mid-European soul."

THE SOVEREIGNTIES OF THE COMING WORLD

Why is this new state so essential to the continued existence of the Teutonic nations? Because, as a result of modern industrial and economic organization, rapid transportation and communication, huge armies and huge navies—the latter for both military and mercantile purposes—only the super-nation can cut much figure in the twentieth century world. This conception sees no future for small nationalities, and it makes no provision for such national organizations as Belgium, Holland, the Balkan States, Spain, Italy, and possibly not even for France. These smaller states, says Herr Naumann, live only on the sufferance of the larger, or eke out a precarious existence by living on the quarrels of the powerful nationalities. Mankind, as Cecil Rhodes said, now "thinks in continents." Naumann has a vision of the coming world, which will be divided into about four, certainly no more than five, mighty sovereignties—huge suns, which, by mutual attraction, will draw all the smaller satellite commonwealths within their orbits. Already three of these mammoth world states are definitely established. They are Great Britain, Russia, and the United States of America. There are only three points in



THE PAN-GERMAN DREAM

The map indicates the territory now controlled by Germany and her allies. Her dream of a Pan-German Empire extending from the North and Baltic Seas to the Persian Gulf is thus practically realized, because she is the dominating power of the war-welded "Middle Europe" indicated by the shading on the map. Perhaps this explains the recent efforts of Germany to bring about peace. There are certain territories—such as Belgium, Northern France, Alsace-Lorraine, and parts of the occupied Baltic provinces of Russia—which Germany probably would give up in order to retain the great body of this dominated area, providing that Poland were granted an autonomous government.

the world, says this German writer, "where government is really exercised: London, New York, and Moscow (or Petrograd.)" England is drawing within her political influence France and Italy, and the United States will undoubtedly make all North and South America, not precisely political dependencies, but nations whose political life can hardly exist except under the direction of their powerful Northern neighbor. Possibly another great centre of political and economic control may develop in China or Japan, though on this point the writer apparently has misgivings, evidently thinking it more likely that the Orient will be swept within the planetary system of one of the other great sovereignties.

Significantly, Naumann does not exclude the German Empire as one of these great Powers. Indeed, he frankly admits that it does not rank with Great Britain, Russia, or the United States of America. The German Empire, as it stands, is too small, too lacking in material resources—in wealth, and, as this German writer frankly says, it has not the germ for government and colonizing which the existing three world groups have displayed. Great ability for economic organization the Germans, indeed, possess, but "it is a question whether or not we have, in addition to organization as a technique, that indispensable quality for world union, that flexible skill which we find in three different forms among Re-

sians, English, and Americans. . . . In order to be a leading, directing, economic nation some sort of international oil is needed, the art, the great art of managing men, sympathy with others, the power to enter into their nature and aims. Practically we have usually been small schoolmasters of the old style or non-commissioned officers with pencils and mustachios."

This art, however, the German people can develop under force of necessity. It lies with these peoples, in conjunction with other races in Central Europe, to form a fourth world state—a new state of "Mittel Europa." Germany, with Austria-Hungary, will form a new central organization about which a great economic and political power can develop—a new sun shedding warmth and light upon a new planetary system. Herr Naumann displays a most un-Germanic modesty in estimating this new world force. It will always, he says, remain a fourth Power—it will never be so great as the other three. Such a new state, however, must arise or both Germany and Austria must disappear. In this new World State the author sees the ultimate significance of the present war. "The question whether a separate centre in Mid-Europe can maintain itself between Russia and England is even now being fought out with all the energies of Europe and with endless bloodshed. The human group, Mid-Europe, is playing for its position in the world. If we lose the fight, we shall probably be condemned forever to be a satellite nation. If we are half victorious, then we shall be obliged to fight again later. If we win a lasting victory, we shall lighten the task for our children and grandchildren, for then Mid-Europe will be entered in the Domesday Book of the coming centuries."

The war has made this close union of Germany and Austria-Hungary absolutely essential to the security of each. It is true that, under other circumstances, both nations might have found partners elsewhere; an alliance between England and Germany would have had many advantages, and once Bismarck schemed to join Germany and Russia. Had Austria-Hungary followed her national in-

clinations, she might have joined her fortunes with France, an arrangement which, if it included Italy, might have unpleasant consequences for Germany. But all such considerations should now be dismissed; the national animosities engendered by this conflict will last for many decades, and thus Germany and Austria are forced into each other's arms for the one sufficient reason, if no others existed, that no European nations will have anything to do with either. Each finds in the other the only friend it has left in the world; necessarily, therefore, they become allies. Herr Naumann naturally becomes cautious in discussing the nature of this association, as he wishes to spare Austria's pride and to conceal, as much as possible, the fact that Germany will be the predominant partner and that Austria will necessarily sink into a position of tutelage. Austria-Hungary, of course, will preserve her national integrity and her present reigning house. Germany will stand ready to lend the assistance of her men of affairs and her bankers in organizing her agriculture and industry. The plains of Hungary, which are now unscientifically cultivated, will, by using German methods, produce wheat enough to feed both empires and thus spare them from the food shortage of the present war. Above all, the German plan looks to the establishment of a Zollverein, or Customs Union, between the two central empires, the plan which, above all, will unite them and make them an economic entity.

THE DISAPPEARANCE OF AUSTRIA

This Customs Union is the grand characteristic of the amalgamation. All Herr Naumann's fine phrases cannot conceal the fact that such a Customs Union, and the other unifying forces he proposes, will make Austria-Hungary an appanage of the German Empire. Indeed, in one place he specifically says that the new arrangement will "seal the verdict of 1866"—the year when, as a result of a seven weeks' war, Austria, once the most powerful state in Germany, lost the leadership to Prussia. Austria's main inducement to agree to the new association will be the potent one that,

without it, she will disappear from the map, the Austrian Germans being absorbed in Germany and the far more numerous Magyars and Slavs becoming parts of adjoining states, or of a new state which will be entirely independent of the Hapsburg crown.

Herr Naumann devotes most of his attention to pleas for the amalgamation of the two central empires. He says little in detail about its extension in other directions, though he clearly indicates that it should include Holland on the North Sea and pretty clearly points to the Balkan States as part of the scheme. For the complete details we should turn from his fascinating volume to André Chéradame's recently published book. What strikes the philosophic German as a reasonable consolidation of German power is regarded by the Frenchman as a diabolical scheme against human liberty and the peace of the world. He calls his book "The Pan-German Plot Unmasked"—the "plot" being this desire to establish "Mittel Europa," which Naumann regards as essential to the maintenance of Germanic power. Like Naumann, M. Chéradame sees in "Mittel Europa" the cause of the war. But the new state signifies more in his eyes than merely a Customs Union between Germany and Austria-Hungary. His book presents several maps in which the whole enterprise appears in graphic detail. Let us understand at once precisely what the Germanic undertaking comprehends, as seen from this French viewpoint.

TEUTONIC DOMINATION OF THE WORLD

With Germany the Pan-German plan, as originally conceived, comprehends Holland, Belgium, certain northern and eastern departments of France, including those now occupied by German armies, and Verdun, Toul, and Belfort, and the German cantons of Switzerland. On the east it would comprise the Baltic provinces of Russia, and Russian Poland. The new state would also take in all the Balkan States and Turkey. Thence it would cross the Hellespont and include all Asia Minor to the Persian Gulf. This "Mittel Europa" would thus be a gigantic wedge

placed in the midst of Europe and Asia, and extending from the North and Bosphorus Seas to the Persian Gulf. Its visible symbol would be the railroad from Hamburg to Bagdad.

Such an enormous state would contain 162,000,000 people, and 1,722,000 kilometres of territory. Huge as it would be, this "Mittel Europa" would not be an end in itself; it would be merely the instrument with which Germany, under the Hohenzollerns, would aim at world domination. Once this scheme were realized, says M. Chéradame, the liberties of mankind would end, for the world in the future would belong to the Teutons. He estimates that this new state would place an army of 21,000,000 men at the disposal of the German General Staff. Germany would organize this army and assemble all the resources of the several countries under its sway, with all its accustomed energy and attention to detail. It could attack India, conquer Egypt, and destroy the British Empire. It would obtain a rich colonial domain with the annexation of Belgium and Holland. There could be nothing more obnoxious to modern ideas of political progress than the success of this grandiose scheme, for it would represent a medievalism especially frightful in character because it would be supported and strengthened by all the resources of modern science and economic organization. It would be the deification of autocracy and the dynastic idea, and would have no respect for those principles, such as the rights of nationalities and popular rule, which we regard as the most priceless elements in our democratic inheritance.

WHY THE PRESENT WAR WAS STARTED

All this, of course, is what we have known for many years as Pan-Germanism. and Pan-Germanism, in M. Chéradame's opinion, explains all our history for the last twenty-five years, as well as inspiring the present war. It was for this, he says, that the Kaiser ordered the mobilization on that fateful August day. Many people have not quite understood why Germany, planning a universal war, selected 1914 as her most auspicious year. Why

any of us have asked, did she not wait until her fleet might successfully cope with Great Britain's? This matter of naval prowess is the one detail in which Germany's preparedness was at fault. An acceptance of the Pan-German explanation makes all this clear. An absolute essential to its success was the domination of the Balkan States. But the Balkan wars apparently destroyed the Pan-German enterprise overnight. When the Balkan States did the unthinkable and formed an alliance for the expulsion of Turkey from Europe, the Central Empires secretly rejoiced over the development, since they expected the Balkan military power to crumble before Turkey—a collapse that would have made them easy prey for the Central Powers. But the success of the Balkan alliance had precisely the opposite effect, in that it enormously strengthened Greece and Serbia, weakened Bulgaria, the friend of the Germanic alliance, and thus erected practically a solid barrier between Pan-Germany and Turkey. The treaty of Bucharest laid the foundations for permanent independent Balkan nations. As time went on these nations would grow in military and economic strength. Thus the early destruction of these new states, before they had time to recover from their exhausting wars, was essential to Teutonic expansion. Therefore, the blow fell in 1914.

THE PLAUSIBILITY OF THE SCHEME

Fanciful all this might have seemed a year or two before the war, yet the events of that war have made it all extremely plausible. The empire of Pan-Germanism, as sketched by M. Chéradame, may seem extravagant, yet when we compare his description of the Pan-German war plan of 1911 with the "war map" to which Bethmann-Hollweg has directed the world's attention, the situation becomes fairly astounding. For German military campaigns seemed almost to have been waged with the idea of making this Pan-German enterprise a political reality. Indeed, the fact is borne in upon us that "Mittel Europa," not as sketched by Herr Naumann, but as drawn by M.

Chéradame, is a reality already. The Teutonic Powers do not control Holland and the German cantons of Switzerland, it is true, but they do control Belgium and the rich iron-bearing northern departments of France. They do not hold Verdun, but their gigantic effort to obtain that stronghold is, after the Marne, perhaps the most dramatic event of the war. They do control Russian Poland and great areas of the much-desired Baltic provinces. Austria-Hungary has all but lost its political independence and become an essential part of the German Empire, for certainly a nation whose army has passed into the control of the German General Staff can hardly be regarded as self-controlling. In the Balkans the Pan-German plan is nearly an accomplished fact. Serbia is now German, as are Montenegro, a part of Albania and the greater part of Rumania. Bulgaria is overrun by German military men and German officialdom—it is closely encompassed within the Prussian hug. Germany, indeed, has not overridden Greece, but King Constantine's attempts to play the German game indicate that he, the Kaiser's brother-in-law, was a willing tool of the Pan-Germanic enterprise. Turkey, in which German influence has been predominant for years, is also under Prussian military control. As Turkey still possesses nearly all Asia Minor this signifies that that rich domain, should the present situation remain intact, will easily fall into the Pan-German scheme. Indeed, if the present trench lines and military outposts are to be taken as indicating the future political map of Europe and western Asia, the Pan-German plan is already realized. The *Drang nach Osten* has accomplished its ends.

WHAT GERMANY MIGHT "CONCEDE"

That "if" constitutes the rub; that explains M. Chéradame's purpose in writing this book and the late Earl Cromer's reason for giving it his "O. K." It also explains Germany's feverish eagerness to establish peace. The "drawn game" is now her main diplomatic play. The time has gone by when Germany hoped to establish peace on the basis of Bethmann-

Hollweg's war map, England's intervention with her fleet having made impossible the conquest of Europe. Germany no longer expects to retain those large areas in western Europe which appear, indeed, as parts of her Pan-German dream, but which, at present, are not essential to its success. She can forego, temporarily, Belgium and the northern departments of France, perhaps even give up parts of the Baltic provinces, and, instead of retaining Russian Poland, erect a so-called "autonomous" Polish kingdom, which will have great military value in forming a barrier between the Central Empires and Russia. All this booty she can surrender now—it can all be retaken in the next war, which Germany is planning already. But she holds certain countries which, lost now, are lost forever. The Balkan conquests must be retained; Serbia, Montenegro, Rumania must remain in her hands. Bulgaria and Turkey must continue where they are now—closely in the Pan-German embrace. Austria-Hungary must be reorganized as essential parts of the German Empire. What Germany must retain as her compensation for all her efforts is the Hamburg-to-the-Persian-Gulf empire. She must realize her dream of "Mittel Europa." And this, in the judgment of M. Chéradame, would amply compensate her. This great empire, rich in human and inert material, would be reorganized by German genius; its fields would be cultivated, many of them for the first time in two thousand years, its mines would be worked, its people drilled into soldiers and economic machines. Once possessed of all these riches, Germany could organize for the next war with her usual industry and thoroughness. And these resources would enable her to win all those other territories that are essential to the complete Pan-German domain—territories which now she is prepared to surrender.

HOW THE ALLIES CAN CHECKMATE

This, then, is the drawn game—this is the idea that possibly underlies those terms, so generous that their mere publication would be regarded as a sign of weakness and collapse. According to M.

Chéradame, Germany will surrender almost anything, provided she can retain the Balkans and Turkey. She will even give up Alsace-Lorraine and the left bank of the Rhine. She is prepared to do this as a temporary expedient, relying upon her ability to retake them with the enormously increased military power that will come with the extension of her empire in the East. The ultimate meaning of all this is clear enough. Europe must consent to no peace that permits the Central Powers to keep the Balkans, and which leaves Turkey as the acquiescent vassal. It is as important that Serbia and Rumania retain the liberty as that Belgium be left free. Here lies the danger of a peace conference. Supposing Germany, at such a conference, should offer to restore Alsace-Lorraine to France in exchange for the "war map" on the Balkans—the glittering possibility might prove too much for French fortitude and French public opinion. Yet what use, M. Chéradame asks, to get Alsace-Lorraine for a few years if France is to lose this, and much more in another war more terrible and destructive even than the present one?

Evidently the Allies are basing the present attitude upon this state of facts. Their reply, stating their terms, shows a real apprehension of what the "drawn game" signifies. These terms include not only the surrender of the western sections of Europe, but complete freedom and independence for Serbia, Montenegro and Rumania, and the extinction of the Turkish Empire. Such an arrangement would effectually block the German plan. Probably the ideal solution of the problem is the destruction of the Austria-Hungarian Empire. That Empire has no homogeneity and no connecting link except the Hapsburg dynasty. Its twenty or thirty races speak different tongues and have different racial aspirations. Its German population would naturally form part of the German Empire, while the Slav and Magyar states could be combined in one nation. The Slav state would mean the end of Pan-Germanism and exert the greatest influence in maintaining the peace of Europe and the world.

The World's Work

ARTHUR W. PAGE, EDITOR

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THE COUNCIL OF NATIONAL DEFENSE AND ITS ADVISORY COMMISSION

Upon which rests the chief responsibility for defense. From left to right: Mr. Julius Rosenwald, President of Sears, Roebuck & Company, of Chicago; Mr. Bernard M. Baruch, a stockholder of New York City; Mr. John D. Rockefeller, President of the Rockefeller Foundation; Mr. Daniel Willard, President of the Pennsylvania Railroad; Mr. John D. Rockefeller, Jr., President of the Standard Oil Company; Mr. John D. Rockefeller, III, President of the Rockefeller Foundation; Mr. John D. Rockefeller, IV, President of the Rockefeller Foundation; Mr. John D. Rockefeller, V, President of the Rockefeller Foundation; Mr. John D. Rockefeller, VI, President of the Rockefeller Foundation; Mr. John D. Rockefeller, VII, President of the Rockefeller Foundation.

THE WORLD'S WORK

APRIL, 1917

VOLUME XXXIII



NUMBER 6

THE MARCH OF EVENTS

THE war is coming to its fourth summer and little by little the ultimate end becomes plainer. The Kaiser still faces an unbeaten Russian line on the East and an increasingly aggressive line of French and English on the West. He has beaten the small nations that joined the Allies but he is further removed from a decisive victory than ever. The grip of the British blockade is weakening the vital forces of his Empire. His schemes of revolution in French and English dependencies have all failed. The efforts for a separate peace with various different enemies have met a like fate. Two strenuous efforts to destroy Great Britain's life blood by submarine attack have failed. The third attempt now in operation has little more chance of decisive results. The loss of tonnage it is causing is serious but not vital, and the attendant loss of submarines is too large to make the renewed campaign permanent. The battle off Jutland proved that the Kaiser's above-water navy could not break the blockade.

What is left? A decisive victory on land or a decisive victory at sea. If the Warsaw campaign did not break the Russian army or Verdun defeat the French, the chances of a decisive German success are much less now. If the battle off Jutland which the Kaiser hailed as a victory

did not open the sea to the German fleet, what better chance will it have in a second encounter?

The Kaiser may still hope for a successful defense of his conquests, but the hope can hardly be optimistic, for he faces an ever increasing efficiency in stubborn and patient foes who have it burned into their souls that anything short of victory is defeat. And the Kaiser must face them with a faltering credit and a shortage of food and materials.

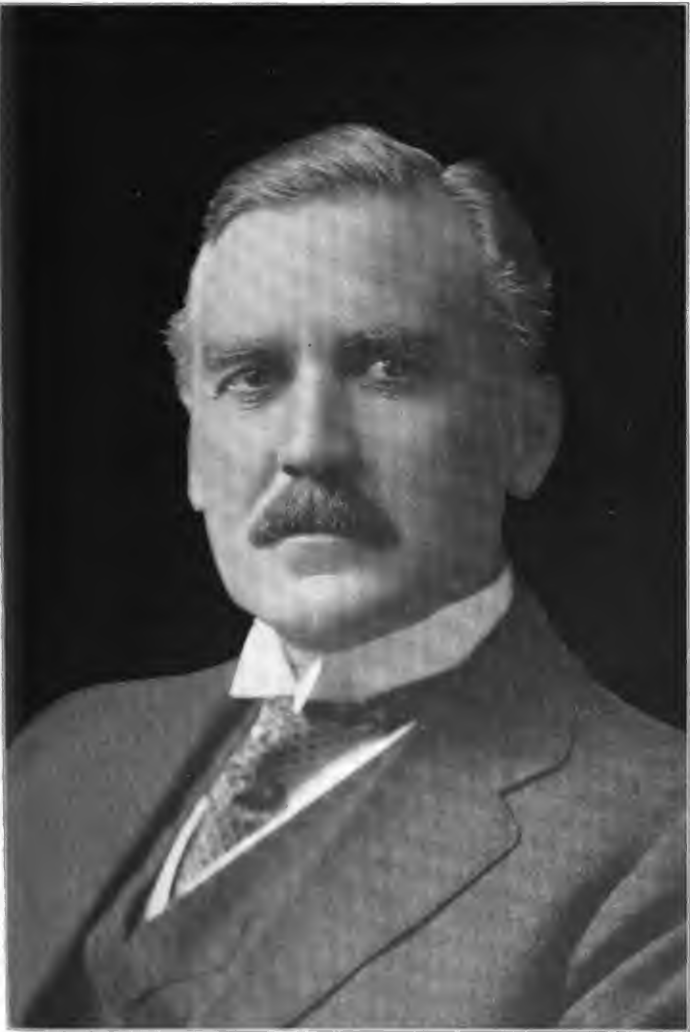
The Kaiser faces the dismemberment of his dream of world empire and the end of a personal power that has for many years threatened civilization with the present war. He is another of the long line of reactionary figures who have taken the feudal doctrines of the Middle Ages and tried to drive back the irresistible growth of individual rights and human liberty. George III was a small character and stupid. Napoleon the First was a magnificent tyrant. Napoleon the Third was scheming and petty. But none of these, though they lived in supposedly less civilized times, ever descended to the inhuman and the conscienceless beliefs and practices which the Kaiser has adopted to reach his ends. In modern times he stands alone of all rulers, either of those who inherited power or those who acquired it by their own abilities — damned in a class by himself.



MR. FRANKLIN D. ROOSEVELT

THE ASSISTANT SECRETARY OF THE NAVY, WHO RECENTLY CALLED FOR AN AUXILIARY FLEET OF 750 SHIPS AND SMALL CRAFT AND 10,000 CIVILIANS TO MAN THEM FOR THE PROPER DEFENSE OF THE NEW YORK NAVAL DISTRICT, ONE EXAMPLE OF THE WAYS IN WHICH CIVILIANS CAN AID IN NAVAL DEFENSE

[See Page 645]



SIR THOMAS WHITE

CANADIAN MINISTER OF FINANCE, UNDER WHOSE ADMINISTRATION CANADA IS SPENDING \$1,000,000 A DAY FOR WAR. BESIDES HER WAR LOANS, CANADA HAS PROVIDED ENGLAND WITH A CREDIT OF \$250,000,000 TO FINANCE THE PURCHASE OF MUNITIONS. CANADA'S NATIONAL DEBT, WHICH WAS \$335,000,000 WHEN THE WAR BEGAN, WILL PROBABLY REACH \$800,000,000 BY THE END OF THIS YEAR



OUR FLEET NEAR ITS STRATEGIC BASE

THE ENTIRE ATLANTIC FLEET OF FIFTY SHIPS, HEADED BY THE FLAGSHIP "PENNSYLVANIA," ENTERING THE GULF OF TONKIN, HAITI, DURING THE 1914-15 MANEUVERS.



"ON GUARD"

THE FLAGSHIP OF REAR-ADMIRAL KNAPP, MILITARY GOVERNOR OF THE ISLAND OF HAITI AND SANTO DOMINGO, ON GUARD TO PRESERVE ORDER THROUGHOUT THESE TURBULENT REPUBLICS



GENERAL FREDERICK STANLEY MAUDE

THE COMMANDER OF THE BRITISH FORCES OPERATING ON THE TIGRIS RIVER, WHO RECENTLY CAPTURED BAGDAD, THE MILITARY OBJECTIVE OF THE PROLONGED BRITISH CAMPAIGN IN MESOPOTAMIA

AMERICA IN THE BATTLE LINE OF
DEMOCRACY

THAT the nation shall, under God, have a new birth of freedom, and that government of the people, by the people, for the people shall not perish from the earth."

These last words of the Gettysburg speech describe the great cause for which Lincoln sent armies into the field to fight. Yet these words do not describe the problem he faced then any better, if as well, than they picture the question which we face now. The Confederacy had no *kultur* designed to drive democracy off the earth. It wished to maintain slavery within its territories, but it had no dreams of a slave super-state. Nevertheless, despite its lesser menace, if the Confederacy had won the greatest experiment in democracy would have broken in two. The greater present menace is that, if Germany should win, every powerful democracy except our own would be immediately dominated by the most thoroughgoing enemy of popular government in the world, and in the final struggle for democracy we should be left nearly alone to conduct the fight against overwhelming odds.

At the end of this war either the world will have a new birth of freedom or a reincarnation of autocracy. Either there will be a spread of government of the people, by the people, for the people, or there will be a spread of a higher state under rulers answerable only to the god of their own imaginations. An Allied victory means strength for liberalism in Europe. And a German victory would everywhere give comfort to reaction.

The great majority of our population has believed that the struggle between these two opposing ideals does not concern us. This belief is a very natural one, for our public is particularly uninformed on foreign matters. For generations American citizens have discussed their every concern fully and freely except foreign affairs. The idea that our geographical isolation rendered us immune from foreign complications has confirmed us in the habit of leaving the determination of these matters in the hands of the President.

The American people do not blindly trust their Presidents in domestic matters. The public, after a fashion, keeps itself fairly well informed on internal questions, and while the Presidency gives its occupant a tremendous opportunity to guide and instruct public opinion it does not give the occupant the power to commit the country to a domestic policy without discussion but still with the assurance of public support. But the lack of public education on foreign affairs gives the President an almost dictatorial power in that field.

The outbreak of the struggle took the President, in common with practically all Americans and most Europeans, by surprise. It was only after neutrality was announced that there was time to begin to study into the causes and possible effects. The public in the United States immediately crystallized its opinion about the responsibility for starting the war and the merits of the two sides. With the exception of the German-born, a portion of the Jews, and a part of the Irish, America hoped then as now that Germany would be defeated. But this hope was founded mainly on the belief that Germany and her satellites were wrong in their quarrel with the rest of Europe. It was founded very little on the belief that the struggle concerned America or American institutions. In various quarters, however, as time went on it became plain that, whatever other characteristics the struggle had, one thing was certain—if Germany won, world democracy would receive a terrible blow; if Germany were defeated, democracy would receive a tremendous impetus. If the President with the power of his position had believed this and exerted his leadership in this direction, it would have become the national idea. As he did not believe this, but felt that the struggle was one in which a democracy could morally be neutral in thought and action, his leadership was used successfully to keep the majority of the people in this notion.

However, almost all Americans who saw the struggle at first hand or studied the German aims came back to report that fundamentally the struggle was in truth a struggle for democracy.

Out of this perception grew the phrases that the Allies or that England was fighting our battle—the battle of democracy. This phrase was naturally resented by Americans of spirit who did not have this idea of the struggle, because they did not want to be put in the inglorious position of having their fighting done by some one else. To prove that the war was none of our concern people pointed to the many weaknesses in England's record of democracy and to the undemocratic nature of the government of Russia and Japan. And there are many Americans who still believe that George III or his spirit still rules England, who distrust the result of any cordial relations for fear we should be dominated by a country of half our population and nothing like our wealth.

Suddenly, against this background was thrown the horrible picture of the sinking of the *Lusitania*. The President was again faced with the necessity of doing something, but this decision differed from its predecessor because there had been time in which to grasp the full significance of the struggle.

The President still held to his original decision—that the struggle did not concern democracy, or at any rate our democracy, and that the greatest service we could render civilization would be to stand as the guardian of neutral rights at sea. But there were a number who did not seriously wish to undertake the defense of our rights at sea, for they correctly realized that this held the possibilities of a conflict with Germany and an end of our neutrality. The President himself was willing to forego a good deal of the strictness of the accountability which he announced we should exact for violation of our rights in order to maintain neutrality. But, as he showed after the sinking of the *Sussex*, he was not willing to give up those rights. When he forced the vote on the McLemore and Gore resolutions in Congress he showed that there was a point beyond which he would not go. The vote also showed that there were a certain number of men in Congress who would give up to Germany entirely. During the long interchanges of notes between the two governments it developed

that so long as we could maintain our position on paper and too many Americans were not killed at sea we felt it to be our highest duty to keep out of the war in order to maintain some part of the world where the processes of peace would continue. By sending Colonel House on special missions abroad and by frequent speeches the President led the public to believe that his policy held out the promise of a glorious part for America to play as a peacemaker, achieving great ends for civilization by mediation.

The President went into the election on the platform of peace, preparedness, and prosperity.

The peace plank was genuine and popular. "He kept us out of war" expressed the feeling of a large part of the population, and they looked very little beyond this phrase except to the surrounding prosperity and to the hope that we might somehow be a great force in the progress of civilization by continuing the processes of peace.

The preparedness plank of the platform was not very sincere. The Administration's record on preparedness is to do as little as public opinion will allow. During the last two years, what has been done for immediate preparedness has been to pass large appropriations for the Navy but to build no ships and to increase the paper strength of the Army and turn the National Guard into a pork-barrel scheme by the Hay Bill. For future preparedness the record is better, for the creation of the Council of National Defense with its Advisory Council lays a foundation on which a sound and economical preparation for defense can be made.

The prosperity plank was the time-honored custom of the party in power claiming and getting credit for good times if they exist.

Immediately after the election the President set to work to demonstrate that there was a nobler possibility in our rather over-worked patience with Germany than just keeping out of trouble. He may have been spurred on, too, by the many and almost unmistakable signs that Germany was not impressed with our reasoning and was going to resume its U-boat war-

fare in such a manner as to give us no choice but to give up our rights or fight. The President, therefore, put in practice his plan to end the war, or at least to affect its ending.

There is a curiously interesting comparison between the President's efforts to do something about the war in Europe and Napoleon III's efforts to mediate in our Civil War.

Napoleon's Ambassador in Washington, M. Mercier, was intrusted with carrying on these negotiations. He thought of the Civil War as many have of the present struggle. He believed the war would, if the Powers of Europe exercised no influence upon it, last for years. He thought the North could never win a decisive victory and he and the Emperor felt, therefore, that a mediation that would stop the war would be the best solution. But the effort came to nothing. As one of M. Mercier's colleagues described it:

"The Emperor of the French wishes to offer peace to both parties and he says both parties will agree to peace; the one on the ground of Union and the other on the ground of Separation."

Between the time the President was elected on the peace plank, with its hope of mediation, and his inauguration, the peace move was tried and failed and in its failure showed how far our Government had misconceived affairs abroad. The peace move was designed to increase our influence in Europe for the good of civilization. It did not affect our small influence in Germany much one way or the other. And the whole episode did not improve our influence with the Allies. The President's plan of what peace should be as interpreted by them pleased them, but his idea that it could be achieved without victory left them feeling that despite his experiences he had not learned to know Germany.

Then the Germans forced us to realize some of the actualities of the situation. The Chancellor announced that the ruthless submarine war would be resumed and that neither our ships nor our citizens would be spared. The President was faced with his promise to send Von Bernstorff home under these circumstances.

He stuck to the promise, but even then still seemed to cling to the hope that in some way or other we might still maintain neutrality and keep out of war. Two of our ships were sunk. Other ships with Americans aboard were sunk without warning. Our Ambassador and our consuls were insulted and mistreated. Still we waited, even refusing to begin many obvious preparations because such preparations might indicate that we were giving up hope of maintaining peace with a nation which was already engaged in acts of war against us. The Government allowed the ships which we had subsidized for years for just such an emergency to give up carrying United States mail. And following a precedent set by Mr. Bryan at the time of the *Lusitania* notes, Mr. Daniels censored and forwarded a dispatch written by a German editor in this country intimating that the American Government would not be as vigorous in action as its words sounded. Finally, however, the practical blockade of our ports and the freight congestion caused by it forced the President to appear before Congress and ask for power to arm merchant ships. As if in commentary on the adequacy of this measure, the President was told on his way to the Capitol that two American women had been killed by the torpedoing of the British ship *Laconia*—an act which could be repeated as well after American ships were armed as before.

While Congress debated the President's proposals, the Associated Press, with the President's approval, printed the German Government's offer of aid to Mexico in the conduct of war against us, accompanied by the flattering suggestion to Mexican vanity that Mexico itself might become great in international affairs as a mediator between Japan and Germany. These German activities were the logical and natural outcome of our tolerant attitude toward Germany's previous conduct toward us at sea and within our own borders. Ambassador von Bernstorff knew that we would not agree to give up our rights at sea, but he knew from previous experience that his Government was comparatively safe in making preparations for a possible break, because even if we dis-

covered them we were so eager to keep our record for peace clear that we would not meet preparation with preparation. He could count on our fear that preparation breeds war to keep us from getting in a position to make our just resentment felt. Under these circumstances he was amazingly successful in painting a picture of a reformed Germany that longed for a righteous peace to keep up the illusions of our Government and practising all the arts of Prussianism upon us at the same time.

The first days of March after the break found us making belated preparations for armed neutrality while Congress debated the wisdom of entering into this state. Considering what preceded the events between the first of February and the first of March, this state of affairs was almost inevitable; for, having proceeded for nearly three years on a wrong conception of conditions abroad, we naturally had made few arrangements for any sudden facing of real ones. The press consoled itself to some extent by discovering for condemnation the German qualities which have been abundantly obvious since August, 1914, and wondering at the barbarity of Germany's conduct.

There was some comfort, too, in the fact that John Adams invoked the device of armed neutrality and that Lincoln was patient in the face of the secession movement. These historical analogies are not very good guides to conduct unless the conditions are carefully studied. But these particular analogies, on second reading, are not even very superficially comforting. John Adams did enter into a state of armed neutrality, but his practice of it was as warlike as if he had declared war. The *Constellation* sailed across the Atlantic, attacked and sunk two frigates of the nation *against* which we were neutral, and we *raised* an army and put George Washington at its head. In the other case Lincoln did go slowly between inauguration and the attack on Sumter. And the reason was much the same as now. He had been preceded by four years of Buchanan's policy of conciliatory non-preparation and hopeful waiting. On the 4th of March, 1861, the country was ill prepared both physically

and mentally to meet its responsibilities, and the same was true fifty-six years later, on the 4th of March, 1917.

Still, whatever the historical analogies, the fact is that when the emergency came we were unprepared, fearful lest by meeting war with war we should lose the virtues of neutrality and the services to civilization of our maintenance of the processes of peace. We were loth to admit that our peace policy had had no other virtue than to keep us out of trouble, and a little ashamed, after so long denying that our entry into the war would serve democracy, to take up that cause only when Germany made our peace plans untenable. Nor was it pleasant to realize that the blockade for our commerce was the immediate reason for discussing action which the death of our citizens failed to produce.

Altogether, thoughtful Americans felt bewildered and uncomfortable, and most of them sought comfort in urging immediate action. The President, too, seemed convinced that action was necessary. But he was not instantly prepared to urge it. It was twenty-three days from the time that Bernstorff was given his passports until the President appeared before Congress to ask for a confirmation of his power to arm American ships. A week was left before the term of the Sixty-fourth Congress expired. The House granted the President the powers he asked by the overwhelming vote of 403 to 13. But taking advantage of the ancient rules of the Senate, eleven members of that body prevented the passage of the bill.

This little group of workers for national cowardice had their way for the time being but, of course, beyond making a legislative record of national humiliation they accomplished nothing permanent. They bound the American people to nothing. The great majority of Congress showed that it would go as far as the President would lead.

After the Senate's disgraceful proceeding the public, under the President's leadership, was faced with exactly the same fundamental questions as before.

Should we meet the German attack on

our rights? Should we claim a part of the duty of insuring a democratic victory in the war?

The plan of armed neutrality was equivalent to telling the Germans that the only danger they ran of war on our commerce would be that some of the merchantmen might sink the submarines that attacked them, but that we should do nothing else to convince Germany of the unwisdom of hostility against us.

Our other alternative was to make war on Germany in the only way in which it could be done effectively—by putting the power of our finance, industry, and transportation behind the sharp sword of the Allies and to begin to train an army as an evidence to Germany that no matter how long the war lasted there would be plenty of men against her. This would mean that we should put ourselves whole-heartedly into the battle line of democracy, and do our part to rid the world of democracy's greatest enemy.

This was a clear enough duty, but one which as a Government and as a people we had studiously schooled ourselves not to face. It involved, first of all, the admission to ourselves that civilization had got no great impetus from our hesitant defense of our rights, and, secondly, the realization that our refusal to prepare so that we would be an immediately serious enemy had been one of the most potent causes of crises we had tried to avoid.

While still wondering if we should have to fight, a few voices grasped the opportunity to point out that if we should actively enter the fight for democracy, we could actually accomplish the high ends toward which our unfruitful efforts at peace were directed. As believers in democracy who will put the test of service to our beliefs, we can not only help rid civilization of its great and organized menace but we can have a real and justified influence toward any or all the ends outlined in the President's programme of what peace should be like at the end of this war. Our participation in the relief of Peking helped for a while to save China from dismemberment. Our participation in this war can make our influence for democracy felt, not as much as if we had

faced the issue sooner, but a thousand times more than if we never face it at all.

But although the attitude of the Government has in the past consistently been that we should not face this issue while facing it would bring us into the war, it had encouraged public opinion to consider the possible international obligations of the United States at some later time.

We no more want territorial or money indemnity than when we went to war with Spain to give the Cubans a free government. And a war against Germany would not leave us in possession of new territory. We should want nothing for ourselves except perhaps the official recognition of the practically long recognized Monroe Doctrine.

Our other aims would be a settlement of the war most likely in human judgment to promote peace and democracy. In this, of course, we should now have to accept in general the terms outlined by the Allies at the President's suggestion, terms which in large measure received public support in the United States. We might perhaps be able to make many details of peace take on a more democratic tinge than they otherwise would have.

These are the broad and altruistic grounds of our usefulness. And we can also serve ourselves in a legitimate manner without interfering with the rights of any other people.

We can, in the first place, get a sympathetic debtor's committee for our referee work on foreign claims in Mexico. We can bring up as an international matter involving all the nations the status of the Open Door in China. We can, perhaps along with the British dominions of Canada and Australia, work out a satisfactory solution of the vexed question of Japanese immigration. We can more easily than otherwise renew treaty relations with Russia and with all Europe. We can enter into a discussion of trade relations, especially tariffs and trade with dependent peoples, that might raise the level and decrease the friction of existing practices. Our morals in these matters can gain at least as much as they can give by foreign contact.

None of these ends contemplates either more or less of entangling alliances than we had when, single-handed, we chastised the Barbary pirates or in coöperation with other nations raised the siege of Peking, and not as much as when we endorsed the sacredness of neutral territory at The Hague or announced our championship of neutral rights at sea. The precedent established (though with no promise to follow it) would be only that if ever again any country should start on a campaign of world conquest and necessarily, thereby, of the destruction of free government, the United States would be among its active enemies.

The President in his inaugural address said:

These are the things we shall stand for, whether in war or in peace:

That all nations are equally interested in the peace of the world and in the political stability of free peoples and equally responsible for their maintenance.

That the essential principle of peace is the actual equality of nations in all matters of right or privilege.

That peace cannot securely or justly rest upon an armed balance of power.

That Governments derive all their just powers from the consent of the governed and that no other powers should be supported by the common thought, purpose, or power of the family of nations.

That the seas should be equally free and safe for the use of all peoples, under rules set up by common agreement and consent, and that, so far as practicable, they should be accessible to all upon equal terms.

That national armaments should be limited to the necessities of national order and domestic safety.

If we really believe "that all nations are equally interested . . . in the political stability of free peoples and equally responsible for their maintenance" we cannot meet this responsibility by words alone.

The main question is still whether the nations of the earth shall have a new birth of freedom and whether we shall have the leadership and courage to do our part in defending the principles of democracy and the rights of nations to live their own lives in security against aggression. The initiative is in the hands of the President, the referendum is the voice of the people.

HIGH PRICES AND TRANSPORTATION

THE susceptibility of our whole economic life to transportation and the present dependence of all parts of the country on sea transportation are strikingly shown by a chronicle of what happened for the first fifteen days after Germany's submarine announcement. That announcement caused what amounted to a partial blockade of our ports, with the stoppage of a large share of our imports and exports, and serious effects upon prices to producers and to consumers.

During the first fifteen days of February only 154 vessels, of 440,525 net tons, cleared from the Port of New York for foreign ports. There had been 185 vessels of 526,755 tons in the same period of January, and 177 vessels of 526,240 tons in the first fifteen days of December. That meant a falling off of nearly 20 per cent. in foreign shipping traceable to German submarine operations. This percentage applied to other Atlantic ports.

The falling off in shipping was accompanied by a decline in export freight delivered by the railroads at New York, Boston, Philadelphia, and Baltimore. In the first two weeks of February it amounted to 8,146,000 bushels of grain and 12,632 carloads of other freight, while in the month of January it was 29,854,000 bushels of grain and 33,100 cars of other freight, and in December 19,837,000 bushels and 31,600 cars of freight. The railroads, in their efforts to handle individually the growing transportation problem of the last two years, had adopted the plan of refusing to accept export freight unless shipping arrangements were already made. When Germany's threat upset the shipping, the railroads' difficulties were immediately augmented, for loaded cars began to pile up all along their lines.

This situation was explained by a spokesman for the American Railway Association on February 16th as follows: "When the submarine blockade went into effect export shipments that were on their way to New York were stopped at the nearest convenient point, and have been held there since. The only shipments

that came into New York after the blockade went into effect were those which were already so near the city that it would have been useless to hold them up elsewhere. This system has, of course, increased the congestion in yards at points west, but it has had comparatively little effect on the New York situation."

The effect of the U-boat threat in the eastern part of the country spread westward. Embargoes were placed on both west-bound and east-bound freight. Approximately 4,000,000 bushels of wheat already sold for export could not be moved from Minneapolis, and it was reported that 30,000,000 bushels of grain were held in Chicago elevators and that about 7,000,000 bushels were tied up in cars in the Chicago district. The difficulty was to get cars to supply the wants of the various sections of this country. That this serious situation had been developing prior to February 1st was shown by an increase in the net shortage of freight cars throughout the country from 62,247 on January 1st to 109,770 on February 1st, but the German threat intensified the situation and was felt even 2,000 miles inshore. There was need for more cars in early February in every part of the country except the East. The continued unfavorable weather, the interference with shipping, and the tying-up of loaded cars greatly increased this shortage after February 1st, and the railroads soon faced a shortage of equipment very similar to that of February, 1907.

Many cities and towns were threatened with a flour and coal famine, and from the Middle West came reports of further food shortage. One would naturally expect that restriction of exports would operate to increase supplies and reduce prices in this country. Transportation, however, sometimes plays a seemingly illogical part in the working of the law of supply and demand, and it was chiefly the transportation difficulty, intensified by the decrease in sailings for the war zone, that sent nearly all prices to new high war levels.

More than one fourth of the 50 per cent. increase in food prices that had occurred in a year took place in the first twenty

days of February. A statement of the Interstate Commerce Commission, following this sharp advance, that "no actual food or fuel shortage exists anywhere in the country, and the high prices should not be attributed to the present freight congestion," contained little consolation for the housewife who was trying to feed a hungry family on the same allowance she had the month previous; but when the Commission went on to say that "transportation conditions will improve steadily," there was reason for her to hope that the high prices would be temporary.

After two years of attempting independently to solve their traffic difficulties the railroads came together in a joint action. Of course, it is probable that the congestion might not have been as bad had the railroads in recent years been able to spend more for equipment. The right method for meeting the trouble at this time, however, would have been the same in any case.

What happened was this: representatives of thirty principal roads got together in Washington and reached a "gentlemen's agreement," covering, among other things, a virtual embargo on all export shipments to eastern ports, the liberal use of the embargo against other freight, and definite plans for the return of empty cars to the West. To meet the urgent requirements for grain in New England, and flour at Pittsburg, Philadelphia, New York, and New England, plans were adopted for bringing two trains a day from Minneapolis alternately over different roads. In simple terms, the railroads, by getting together, agreed that they had to act as a unit to cope with the situation.

If this experience of February in the transportation field means anything, it clearly indicates that the only way to deal with such a national problem is through a central control in which ample power is vested. And if rising living expenses since the war started have not shown the need of such control of our transportation lines before this time, then the sharper advance in February, and the urgent need of such control as a measure of preparedness, should be sufficient to show the need.

AFTER-WAR BUSINESS

EVERY American business man wants to know what effect the ending of the European War is going to have on business in this country.

He knows that the increase in our exports of explosives, for instance, from \$6,000,000 in the 1914 fiscal year to \$467,000,000 in 1916, cannot last, but he is in doubt as to how much of the advance from \$165,000,000 to \$436,000,000 in exports of breadstuffs, or from \$251,000,000 to \$621,000,000 in exports of iron and steel products, we are going to hold.

A recent report of the National Foreign Trade Council on "World Trade Conditions After the European War" throws some light on this situation. It estimates the loss of public and private property in the European theatres of war at nearly \$6,000,000,000. Some of this loss will never be replaced, and a good part of it will only be restored gradually.

Agricultural machinery, seeds, and building materials will be in immediate demand in Europe after the war. The Federal Trade Council estimates the first year's needs of Belgium and France for industrial buildings, for machinery of all kinds, and for railroad repairs, bridges, roads, and other Government property at \$1,316,000,000.

Germany will require little of these for reconstruction, but her need for food supplies and raw materials will be urgent. This is estimated for the first year at about double what it was before Great Britain shut her off from our markets. This discloses a possible demand by Germany for \$1,890,000,000 of goods from this country in the first year after the war, and for about \$400,000,000 more by Austria-Hungary. Adding the Russian estimate of \$600,000,000 for that country's requirements for rebuilding, a total possible demand for \$4,200,000,000 of food and materials is disclosed.

The United States, right after the war, will be in as good, if not better, position than any other country to supply these demands; and having gained a fair share of the business, we should be able to keep at least a goodly proportion of our export

trade, which amounted to \$5,481,000,000 in the last calendar year.

The details of export and expectations of export of one kind of product may make the situation plainer.

The locomotive builders of America received, in 1916, for the first time in history, orders for more locomotives from foreign countries than from American railroads. Of the sales of railroad cars and locomotives in 1916 (totaling more than \$550,000,000) nearly one third were for export, principally to England, France, and Russia. The largest buyer of such material in the last two years has been the Russian Government, which has ordered in America, since June, 1915, 1,134 steam and gasolene locomotives and nearly 21,000 freight cars. No American railroad during the last two years has ordered as many locomotives, and only one American system, the New York Central, has ordered a larger number of cars. The largest order for rails ever placed in this country was placed by Russia last July—for 425,000 tons of 67½-pound rail at \$50 a ton. For years before the war the standard price had been \$22 a ton. Russia also ordered more than 300,000 tons in 1915. Since the war began the War Office and railroad lines of France have ordered in America 791 engines and 35,000 cars. England, since February, 1916, has ordered 830 engines, most of them for use in France. American locomotive builders have received orders from Belgium, Serbia, Egypt, and Finland. Italy has come to us for 100 large engines and 3,000 freight cars. We have sold 88 large engines to private lines in Spain.

The freight cars have been practically all for regular service. The locomotives have ranged from tiny seven-ton gasolene locomotives and queer little steam or fireless locomotives for use behind the trenches to large 100-ton engines for use with heavy trains. One of Russia's larger engines (there have been 650 of them), although small as American standards go, holds the record for having hauled the heaviest train in Europe.

These orders are fast putting one of America's largest industries on a peace

basis, and there is every reason to believe that the orders will continue to come to us in the future. It is a difficult task to estimate the actual depreciation of railroad equipment in the warring countries. We do know, however, that cars and locomotives are being called upon for unprecedented service, and we have had our attention called again and again to the shortage of labor and materials that has prevented proper maintenance of railroad rolling-stock. When the war is over European railroad shops will be hard pushed to bring back to standard such equipment as they will have and to replace such of it as will be beyond repair. They will, therefore, have little chance for many years to manufacture sufficient new equipment to meet increased demands. Even if the British increase their locomotive building, it is fair to assume that if America makes good on its present car and locomotive contracts there will be a demand for American locomotives overseas.

And America is making good on her present contracts. The equipment for France and England is being built to the standards of those countries except for certain details concerning which the buyers have been convinced that American practice is slightly better. The big strides that American car and locomotive builders have been making within the last few years are helping greatly toward meeting those refinements in design that hitherto have characterized much foreign railroad equipment in distinction to our own.

AN INCH OF DRESS COSTS \$10,000,000 IN SHOES

AT A convention of retail shoe dealers recently, a member of that trade, Mr. A. D. Anderson, of Boston, made the following remarks which to the ordinary consumer can hardly help being somewhat startling:

"Every inch added to the length of women's dresses means a loss of \$10,000,000 a year to the shoe business. When we have short skirts we can make lovely high boots that are pleasing to women, and give her an added touch of beauty. Such shoes are costly, but this is a prosperous country, and women who can af-

ford expensive gowns will not hesitate to pay \$20 for boots, provided they get style and quality. This is true of the shopgirl, too, in like ratio. This year the skirts are to be 6, 7, and 8 inches from the ground, which means that shoes or boots are to be high."

Mr. Anderson advised the shoe men to employ style experts who could advise their customers as to the proper styles and color effects in shoes. The color of the shoes, he said, should invariably match that of the gown.

Mr. Anderson conducted a style show that brought to the fore a new element, not hitherto discussed, that the shoe manufacturers and the garment industries are in conflict. According to Mr. Anderson the skirtmakers want them long, while the shoemakers are demanding from eight to nine inches of a woman's pedal extremities for themselves to show off their high shoes. The hosiery makers demand two inches for the display of their goods. From there upward the garment makers are given full sway.

"This," said Mr. Anderson, "is not altogether pleasing to the garment manufacturers, who argue they must lengthen the skirts to allow them to sell more material, and for every inch added to skirts \$10,000,000 goes out of the pockets of the shoe men."

Mr. Anderson draws a neat picture of the squabble between the dress makers, the makers of stockings, and the shoe men over which shall get some ten million dollars of the American woman's money. If the shoe people win women wear short skirts. If the shoe and stocking groups combine they are likely to wear very short skirts. If the skirtmakers dominate the situation shoes and stockings will be less conspicuous.

The only people who seem to have no voice in the matter are the women who are to pay the ten million dollars and wear the clothes. Might it not be a good plan if some or all of the women's societies took up the question and decided on what they thought would be most becoming and comfortable for the ten million dollars they seem destined to pay?

HAVE WE BECOME LEVITES?

BELGIUM and the occupied portions of Northern France are the only parts of Germany's conquests where there is an organization that can get food to the people.

The organization that established a new precedent in history by volunteering to distribute food in conquered territory and accomplished an extraordinary diplomatic feat in getting and maintaining the confidences of the belligerents on both sides is American. This American organization has fed the Belgians better than Germany has fed the Germans and has bought food with English money, carried it to Belgium, and sold it to the Belgians and French cheaper than the price at which the same food could be had in London. The entire overhead charges of the Commission for the Relief of Belgium are less than one per cent. Most of the money for this work is advanced by the Governments of England and France. That has been supplemented and must be supplemented by private donations. The donations have come from many countries, but those that have been most generous are those on whom the other burdens of war are heaviest. The United States, in proportion to its numbers, has given least. Generous Americans should send money to the Commission at 120 Broadway, New York City.

There are many things about this situation which remind one of the story of the good Samaritan, which is:

A certain man went down from Jerusalem to Jericho, and fell among thieves, which stripped him of his raiment, and wounded him, and departed, leaving him half dead.

And by chance there came down a certain priest that way: and when he saw him, he passed by on the other side.

And likewise a Levite, when he was at the place, came and looked on him, and passed by on the other side.

But a certain Samaritan, as he journeyed, came where he was: and when he saw him, he had compassion on him.

And went to him, and bound up his wounds, pouring in oil and wine, and set him on his own beast, and brought him to an inn, and took care of him.

And on the morrow when he departed, he took out two pence, and gave them to the host, and said unto him, "Take care of him; and whatsoever thou spendest more, when I come again, I will repay thee."

Which now of these three, thinkest thou, was neighbour unto him that fell among the thieves?

And he said, "He that shewed mercy on him."

THE COST OF THE WAR

THE war to date has cost the fighting nations close to 80 billions [\$80,000,000,000] of dollars, and every day now adds about 115 million dollars to that total. Most of this gigantic cost has been paid by government borrowings. Aside from the amount that Great Britain is meeting direct from taxes, both the Allied nations and the Central Powers have already mortgaged, by loans or otherwise, about one fifth of their combined national wealths to meet the cost of war. If the wealth of the United States were added to that of the Allies, it would nearly double their total wealth. This indicates how the credit of this country might be used to help them.

The Allies, in vigorously continuing the war, have spent nearly twice as much as have the Central Powers, one of the chief reasons for this being that the Central Powers prepared in peace times, when preparation is cheap, and the Allies improvised in war time, when improvising is wasteful and expensive. The total cost to the United Kingdom, according to Mr. Bonar Law's latest statement in Parliament, was 21 billion dollars, and the present daily cost \$28,950,000. These figures include England's generous advances to her allies, and show that she is carrying more than one fourth the total war cost. The division of the total daily net cost is now around \$75,000,000 for the Entente Allies and \$40,000,000 for the Central Powers.

This is at the approximate rate of 19 cents a day per capita for the Allied countries of Europe and Asia, exclusive of their colonies, and at the rate of 26 cents for the Central Powers. With Canada, Australasia, India, and all other colonies included, the daily per capita cost to the Allies is less than 9 cents, while for the Central Powers, including Germany's colonies, it is more than 24 cents.

Corresponding figures for the total cost of the war to date are approximately \$14 per capita for the Allies without their colonies, and \$173 for the Central Powers. Including colonies in both cases, the cost of two and two thirds years of modern war-

fare has been about \$63 per capita for the Allies and \$158 for the Teutonic Powers. Although the Allies are spending twice as much money, the burden on them is not half as great.

As an indication of the comparative financial strength of the fighting groups the record subscription of new money for the latest British loan, from five times as many subscribers as for any previous loan, shows an increasing strength beside the reduced amount of subscription for the fifth German war loan and the significant reduction by more than 25 per cent. in the number of individual subscribers.

THE EPISCOPAL CHURCH PENSION FUND

A GENERAL pension system went into operation in the Protestant Episcopal Church in the United States on March 1st. It provides for the old age or disability of the 4,500 Episcopal ministers in the United States and for their widows and dependent orphans. These ministers receive an average salary of only \$1,200 a year, which includes the value of a house, when provided. Obviously this amount gave little chance for saving and when the average minister got too old to work he must face extreme poverty. This has now been mitigated by a deferred salary of at least \$600 a year after his active ministry is over. The raising of the fund necessary to start this pension system on a scientific basis should mark an epoch in the history of the Episcopal Church. Fifty dollars a month is not a great deal with which to make comfortable one's declining years but it is enough to make a man independent and to save his self respect. And this assurance for old age should make the call to the service of the church more appealing, so that abler men will become ministers, and as the pension is paid after retirement there will not be the same incentive for men beyond their age of usefulness to cling to their tasks to avoid starvation or charity.

The interesting characteristic of this pension system is its sound business basis. The money to pay pensions now coming

due is already provided for at the start. Funds are now in hand to begin payments at once to those who reach the age of retirement after March 1st, or to the widows and orphans of ministers who die after that date. More than \$6,500,000 in cash or pledges has been contributed for that purpose. The pledges were conditional on the raising of \$5,000,000 which actuaries scientifically computed was the minimum amount necessary to put the plan into full immediate operation. To continue its full effectiveness each parish must now pay to the fund an amount equivalent to 7½ per cent. of its minister's salary. Separate accounts will be kept for each minister and the others will not suffer a reduction of their pensions if any parish neglects to pay its assessment. This pension fund has voluntarily placed itself under the provisions of the New York State insurance law, which is proof that it will be able to fulfill all its promises. It is the first instance of a pension system being subject to insurance supervision, and one of the first cases where such a fund has raised its accrued liabilities at the start.

To Bishop Lawrence of Massachusetts largely is due the credit for the method and success of raising in a year the large sum needed to start this system. The campaign, however, was supported and carried on by the laymen of the church and it is they who will see that the plan receives the support that has been pledged by each of the sixty-eight dioceses and that it continues to operate fully.

"THRIFT BONDS"

NO SMALL part of the wonderful showing France has made in this war has been due to the fact that back of the army in the field has been a much larger army of trained investors supplying the "silver bullets." For when the French peasant gets 100 francs ahead he becomes an investor, and his first purchase is generally a Government bond, or a "rente" as it is called in France. This means that he buys an interest return, and he thus becomes an investor in the truest sense of the word. He will likely hold the

security till death. It has been the holders of these 3 per cent. rentes (said to number more than 4,500,000 when the war started) who have appreciated the attractiveness of a 5 per cent. French Government obligation and have backed their patriotism with their investment training. In no other nation is so large a percentage of the people holders of government bonds and thus directly financially interested in the outcome of the war.

The movement to spread the "Thrift" idea in this country, started by bankers a year or more ago, has met with slow response, as was expected, but there is evidence that it has made progress. It should be continued vigorously as a measure of preparedness for peace as well as war, and should have the hearty support of every American.

One of the most important developments in this thrift campaign has been the recent organization of the National Thrift Bond Corporation by reputable banking and business interests for the sale of small-denomination certificates backed by municipal, county, state and national bonds. These "Thrift Bonds," in denominations as low as \$10, will be put on sale in department stores, cigar stores, drug stores, etc., as well as in banks and express offices. The tax-secured bonds on which they are

based will be deposited with the Equitable Trust Company of New York, and, as further security, a safety reserve fund will be established. The corporation will be under the supervision of the New York State Banking Department. "Safety and 3 per cent.!" will be its motto. That there is reason to believe people with small savings will invest at 3 per cent. interest is the conclusion that must be drawn from the fact that more than \$100,000,000 has already been deposited under the Government postal savings system, where it earns only 2 per cent. The progress of this plan to popularize safe bonds will be watched with interest.

A WORD OF APPRECIATION

WHEN the special edition of the *WORLD'S WORK* was put to press last month (March issue) the editors of *The Scientific American* generously granted this magazine the privilege of reproducing from its pages several diagrams of submarines. In the haste of making up this emergency number, credit lines acknowledging this courtesy were omitted through inadvertence. The editors of the *WORLD'S WORK* take this opportunity to make amends and to express their appreciation.

GOOD SMALL BONDS FOR SMALL INVESTORS

Every month the WORLD'S WORK publishes in this part of the magazine an article on experiences with investments and lessons to be drawn therefrom.

RECENTLY, the editor of this department made an analysis of his correspondence to discover, if possible, whether it contained any evidence of the results of the campaign of education in thrift which the bankers carried on with so much vigor last year throughout the entire country.

The analysis disclosed a surprisingly large number of letters, received during the last few months in particular, from

people who appeared to possess the four qualities which the head of one of the large savings institutions in New York once declared a man must possess in combination before he could be thrifty, namely, industry, economy, prudence, and frugality. It revealed, also, the fact that the authors of these letters were of two general classes; first, those who felt the necessity of entering into some kind of ironclad contract, involving the obligation

to devote so much money at certain periods to a definite purpose; and second, those to whom the idea of contractual obligation was more or less distasteful.

A letter from one of the latter class touched in an interesting way upon a phase of the investment market to which it seems timely to refer in detail because of its rapidly increasing importance.

"Your pages," this correspondent said, "have been carefully read to see if any advice has been given recently to the particular class of society to which I think I belong at present, but thus far I have failed to find any. In order to receive a definite answer, I realize you must have explicit data, so here it is:

"I am a civil engineer, thirty years of age, with one child and a sensible wife. I am employed in the Government service at a salary of \$125 per month and my subsistence.

"My wife has a private income of \$50 per month, and we live by the budget system, allowing \$100 per month for all expenses. I carry \$3,000 life insurance in the form of a twenty-year, paid-up policy.

"Twenty-five dollars a month is set aside for the education of our daughter when she grows up. We have, therefore, \$50 a month to invest.

"We are not so much interested in easy or rapid liquidation possibilities as we are in high income yield and safety. Nor do we care to buy anything on the partial payment plan, as the entailed obligation, we fear, might be the cause of a good deal of worry. . . . What we buy we wish to be entirely paid for at the time.

"Apparently, stocks, or bonds in \$100 denomination, would meet our requirements, but there are so many issues that a neophyte is at a loss to know what to choose."

In replying to this letter, two general suggestions, pertinent in all cases involving the disposition of small savings, were made. First, that as between stocks and small denomination bonds, the latter could be recommended the more strongly in the early stages of one's investment experience. And second, that even if there were many of these small bonds having the same underlying security as

the big bonds in which the savings banks invest the funds of their depositors, their purchase could not be urged haphazardly upon every thrifty person with savings of only a hundred dollars or so.

It is well to repeat in this connection what this magazine has frequently said in referring to the small-denomination bond "movement," as it is called; namely, that these big, resourceful institutions—the savings banks—have means that are not at the disposal of small investors to minimize the effects of the mistakes of judgment to which investment, however carefully managed, is always subject.

But granting that the savings banks deposit is a form of investment for which, for a great many people, there is no proper substitute, there are circumstances, nevertheless, in which the little saver may safely and advantageously supplement his bank account by judicious purchases of bonds.

It is gratifying to find nowadays fewer corporation managers and municipal authorities who are averse to splitting up parts of their bond issues into the smaller units; and fewer bankers who, merely because of the admittedly increased cost of distribution, will refrain from encouraging among their clients a demand for such investments.

In the quiet, unlisted class of bonds, the

BONDS	YEAR OF MATURITY	YIELD OF INCOME
American Foreign Securities 5% notes	1919	6.75
Anglo-French 5's	1920	7.50
City of Bordeaux (France) 6's	1919	8.50
City of Lyons (France) 6's	1919	8.50
City of Marseilles (France) 6's	1919	8.50
City of Paris (France) 6's	1919	9.00
City of New Orleans, La., 4½'s	1947	4.00
City of San Francisco 5's	1950	4.15
C. B. & Q. Denver div. 1st 4's	1922	4.00
Chic. Mil. & St. Paul conv. 4½'s	1912	4.65
Norfolk & Western 1st cons. 4's	1906	4.25
S. Pacific-San Francisco Terminal 1st 4's	1950	4.75
Virginian Railway 1st 5's	1902	5.00
American Gas & Electric deb. 6's	2014	5.98
American Power & Light deb. 6's	2016	6.10
Denver Gas & Electric 1st 5's	1949	5.00
Kansas City Railway 1st 5's	1944	5.00
Kansas City Light & Power 1st 5's	1944	5.10
Montana Power 1st. and ref. 5's	1943	5.00
Bethlehem Steel 1st. & ref. 5's	1942	5.00
Central Leather 1st 5's (registered)	1925	4.75
General Electric debenture 3½'s	1942	4.75

SMALL-DENOMINATION BONDS

And their rates of income

supply of small-denomination issues has increased rapidly during the last year or so, and it is to this class that investors who, like the young engineer, are "not so much interested in easy or rapid liquidation possibilities as in high income yield and safety," may well turn their attention at first. Here will be found numerous municipal and public service corporation bonds yielding from $4\frac{1}{2}$ to $5\frac{1}{2}$ per cent. The way in which such bonds are handled makes it impracticable to cite specific issues, but the small investor needs no better guide to safety than to confine himself to such bonds as are recommended for his particular purpose by banking

houses of long experience and success in these fields of specialized finance.

To illustrate the variety of small-denomination bonds of both the listed and unlisted classes that are better known in the general market and more or less actively bought and sold from day to day the list on page 593 is given.

For an investor in circumstances like those described in the young engineer's letter, one might recommend successive purchases for the first \$500 of such bonds as the Anglo-French 5's, City of San Francisco 5's, Chicago, Milwaukee & St. Paul $4\frac{1}{2}$'s, Montana Power 5's, and General Electric $3\frac{1}{2}$'s.

WHAT WE CAN LEARN FROM CANADA

ITS SUCCESSES AND FAILURES AS A WAR-MAKING DEMOCRACY AND THEIR LESSON FOR US

BY

BURTON J. HENDRICK

WHAT can the United States, in its present crisis, learn from Canada? In many ways the recent history of our northern neighbor presents a contrast that is not entirely gratifying to our national complacency. The decision with which Canada acted in the early, fateful days of August, 1914, contains certain lessons for the Wilson Administration. The world war came to Canada as an overwhelming surprise. It found the Dominion even less prepared for war than is the United States. Canada had practically no naval forces to defend her coasts against German assault—a danger which, with German cruisers roaming the Pacific, was an imminent one; she had a "standing army" of less than 3,000 men, scattered all over her extensive territory, and an ill-equipped and untrained militia of perhaps 60,000. Canada's economic condition was deplorable; the Federal Government itself had over-extended its credit for the construction of internal improvements, many of them unwarranted; business conditions were depressing and unemployment was

widespread. Party feeling ran high. Yet, as soon as the German army crossed the Belgian frontier, Canada instantaneously placed herself on the side of civilization. The Prime Minister, Sir Robert Borden, notified the mother country, on his own responsibility, that Canada regarded the war as Canada's war and would assist England to the limit of her men and resources. An extra session of Parliament, called immediately, overwhelmingly ratified this decision. Sir Wilfrid Laurier, the leader of the opposition, and Canada's most brilliant statesman, declared a "truce to party politics," and eloquently placed the Liberal Party back of the nation. Parliament voted a preliminary credit of \$50,000,000 for war purposes, and, in six weeks, a force of 33,000 men sailed for England.

The experience of Canada is especially valuable to the United States, because, in all the essentials of political and social life, the two countries are the same. Both nations are democracies and both draw their fundamental institutions from the same source. Both represent the same mixture of people, with the great excep-

tion, of course, that the United States has no great compact Latin element, making up one third of its population, speaking what to the majority is a foreign tongue, tenaciously resisting assimilation, and clinging generation after generation to the civilization of two centuries ago. In their recent development, however, Canada and the United States have followed parallel lines. The history of immigration to Canada has been practically identical with that to the United States. Canada has a large quota of immigrants from the British Isles, as have we, and she has also her Germans, her Galicians, her Hungarians, her Italians, her Eastern Europeans and even her Orientals. At present, however, Canada's Germans have the greatest interest for the United States. This element in our own population, still jealously retaining its memories of the Fatherland and frequently blatant and tactless in expressing its loyalty to the *Deutschstum*, gives Americans most concern. In case we have war with Germany, what will the hyphenates do? Some regard these millions of German-Americans as little better than emissaries of Pan-Germanism, who, at a concerted signal, will rush to arms and convert the United States into an outpost of the Hohenzollerns.

On this point we can learn much from Canada. For there are German-Canadians as well as German-Americans. And they present just about the same aspects in both countries. There are perhaps 10,000,000 people in the United States who, in various ways, trace their racial origin more or less directly to Germany. This includes those actually born in Germany, and those who, for more than one generation, have a preponderance of German blood in their veins. As the population of the continental United States is about 100,000,000, this means that about 10 per cent. of our people are of German ancestry. Canada has roughly 400,000 Germans out of a total population of 7,200,000, or about 5½ per cent. The proportional German population is thus somewhat larger here than in the nation to the north, but not so much larger that it renders comparisons valueless. And German immigration has followed practically the same historic courses in both countries. The bulk of the Ger-

man population, in the United States as well as in Canada, represents the influx of the years preceeding 1870. These Germans came mainly from the southern parts of Germany; they were in many cases revolutionists and political refugees, or at least peace-loving Germans who left the Fatherland to escape the Prussianism that is now flaunting the world. In western Ontario there is a peninsula formed by Lake Erie, Lake Huron, and Georgian Bay; herein is situated Canada's Wisconsin—an area that contains a large German agricultural population, a considerable part of which has lived here for more than one generation. The very names of its towns—Berlin, Baden, New Hamburg, Guelph—indicate its origin. Berlin, the largest of these places, with a population of 15,000, of which 10,000 are German, is Canada's Milwaukee. The more recent German immigrants, of whom there are about 39,000, have settled, for the most part, in the recently opened Western provinces—Alberta, Saskatchewan, and British Columbia.

GERMAN-CANADIANS AND THE WAR

If Canada's experience with these German-Canadians is any guide, then the United States has little to fear from its Germanic elements. Berlin—the name has since been changed to Kitchener—for several months made the largest per capita contribution of any city in Canada to the Patriotic Fund. The Turn-Vereins and the Schuetzenbunds of German-Canadians have not turned out to be secret military organizations. Every singing society has not shown itself to be merely a branch office of the Pan-German League. In the early days reports were current that all the cellars in the German colony of Toronto were filled with German reservists fully equipped for war and that a million Germans had gathered in Buffalo for an invasion of Canada—but these stories faded on investigation. If the German-Canadians have been busy building artillery emplacements at advantageous points near the large cities, time has not yet revealed them. Practically all German-Canadians sympathize with Germany in the war, but this sympathy does not take the form of overt acts. A few have en-

listed in the Canadian forces, but not many—as a test of their loyalty, however, this is hardly fair, since German recruits are emphatically unwelcome. A very few Germans, practically all non-citizens, have made trouble, especially by giving expression to the Prussian passion for blowing things up. All such trouble makers, and all who give reasonable grounds for suspicion, have been interned. About 7,000 subjects of the Kaiser and Austria have lived in these internment camps; a majority, however, have been confined more from pity than from any other motive, as they were out of work, penniless, and destitute. In recent months several of these camps have been closed and the prisoners set free, so that now only about 3,000 subjects of the Central Empires are living in duress. For all practical purposes German-Canadians have given no trouble.

THE FRENCH-CANADIAN PROBLEM

But Canada has her racial problem, more deep seated and more serious than anything that can plague the United States. The war strengthened Canada's bonds with the Empire, but it has had a disuniting effect within the Dominion itself. Parliamentary debates upon the war make depressing reading, for they consist largely of racial recriminations. A general election this fall, which may take place, would be a most unfortunate thing, as it would degenerate largely into a mud-slinging contest between the French and English elements. For Canada's racial problem arises not from its recent immigrants, but from that part of the population which has been longest settled in the country. The fact is that the French-Canadians have not enlisted in any numbers at all proportionate to their strength. But the situation is too complex to be dismissed by a phrase. No one can accuse Jean Baptiste of cowardice—he is directly descended from the same ancestors as the defenders of Verdun, and, on more than one occasion, he has courageously defended Canada from invasion—as it happened, invasion from the United States. And, in the present war, the French-Canadian battalions have fought in France with the utmost heroism. When assailed in Parliament for disloyalty, the

champions of the Frenchmen rise and point to the fact that, when the great schism came, it was John Bull's English-speaking colonies, not his French-speaking colonies that broke the bonds with the mother country. Disloyal to the British connections the *habitant* certainly is not. He does not regard France as his fatherland, and, if given his free choice, would overwhelmingly accept Britain's overlordship in preference to that of his original allegiance. His sympathies in this war, as manifested in his newspapers, his daily speech, and his contributions to the Patriotic Fund, which have been almost as large as those of his English-speaking friends, are with the Allies. The position of the most influential French-Canadian leader, Sir Wilfrid Laurier, has been more than correct; no one has spoken so eloquently as he, in Parliament and out, for the English cause; he has traveled through Quebec, making recruiting speeches, and he has vigorously condemned certain French-Canadian politicians, such as Bourassa, who are openly anti-English in their sympathies. It is true that his attitude, especially in recent months, has offended his Conservative opponents and has led to half-suppressed accusations of disloyalty. While the Opposition supports as strongly as ever Canada's participation in the war, it reserves the right to criticize its actual management, and Sir Wilfrid has done this so unsparingly and so directly that, in ultra-Conservative quarters, he is looked upon almost as a public enemy. It is also true, that, in a recent by-election in Dorchester, Quebec, he openly endorsed the candidacy of the Liberal candidate, whose utterances on the war seemed virtually seditious. But no serious person questions Sir Wilfrid's devotion to the cause of England and her Allies.

Still, the ugly, outstanding fact is that French-Canada has enlisted in most inadequate numbers. Practically all Canadians, when questioned on this tender subject, place the blame upon the Roman Catholic Church. That the hierarchy have officially encouraged recruiting, is admitted, and, most people believe sincerely enough. But the influence of the parish priest, who comes into daily intimate

contact with the *habitant*, is apparently against participation in the war. Quebec is full of religious orders expelled from France by the anti-clerical laws passed in recent years, and the general feeling of the devout French-Canadian Catholic is that France is an atheistical country which God is now punishing for its sins. Possibly this explains the comparatively light recruiting in Quebec; yet we must remember that the French-Canadian is a simple, peaceful creature, to whom the war is so remote that it makes little impression on his imagination, and who cannot yet understand why he should cross the sea for three thousand miles and risk his life in a cause the meaning of which he does not faintly comprehend. He does not read blue books or white papers, European diplomacy of the last twenty-five years concerns him little, and his mind cannot spring far enough ahead to associate the triumph of England with the ultimate security of his own beloved Canada. If Hindenburg were pounding at the gates of Quebec, there is little question that the French-Canadian would shoulder his rifle; but Hindenburg in the Carpathians or the Russian morasses does not strike him as anything that threatens his own parish. Again, the French-Canadian marries when very young and has an astonishingly large family—twelve and fifteen children being not uncommon. Under any proper system of military service he would be among the last to be called to the colors.

CANADA'S LARGE ENLISTMENT

From the military standpoint, Canada presents the spectacle of a democracy waging war in the way that democracies have usually waged war—on the voluntary system. She has given men to an extent that has far exceeded the expectations entertained at the beginning of the war. It was then suggested that a Canadian army of 100,000 or 150,000 men would be an heroic contribution to the cause. Up to January 22, 1917, the actual number of Canadians enlisted was 392,647—these were the figures given by Sir Robert Borden in the House of Commons. Up to December 31, 1916, Canada had sent overseas 280,562 men, besides a considerable

contribution to the naval service, to British munition works, and to other departments in England. More than 175,000 Canadians have seen service at the front, either in France or the Near East. Canada keeps continuously four divisions, or from 80,000 to 90,000 men on the scene of war. Up to date she has had 70,000 casualties; 10,000 men have been killed in action, 4,000 have died of wounds, and 48,000 have been disabled. Canada's military establishment is twice as large as England's before 1914.

But, properly to appreciate the magnitude of this effort, let us seek comparisons that will bring it nearer home. The continental population of the United States—exclusive of dependencies—is about thirteen times as large as that of Canada; if we, therefore, multiply all these items by thirteen, we shall have the magnitude of Canada's performance, measured in terms of our own capacity. That is, if we should do no more than Canada has done, we should enlist roughly 5,000,000 men, send overseas 3,640,000, of whom 2,275,000 would have already have seen service at the front. We should constantly keep in the fighting line fifty-two divisions, or about 1,000,000 soldiers. Our casualties would have reached, up to date, 910,000, and nearly 200,000 Americans would have sacrificed their lives. Certainly, if the United States could show any such record as this, we should probably think that we had made a solid contribution to the cause of justice and civilization. And these figures represent precisely what Canada has done.

EVILS OF THE VOLUNTEER SYSTEM

Yet this achievement has another value for us, in that it illustrates all the inequalities and injustices of the voluntary system. Most Canadian officials, in discussing the situation with me, emphasized the fact that, if the United States goes to war, it should profit from Canada's experience and adopt conscription at once. In a recent statement in Parliament, Sir Sam Hughes, the ex-Minister of Militia, said that, based upon the census of 1911, Canada contained 1,720,000 men between the ages of 18 and 45. This represents the military resources of the nation, so far as

men are concerned. Of these 1,088,000 are unmarried. This is the class which, under universal service, should be the first called upon. The present enrolment, according to Sir Sam, comprises roughly 100,000 married men and 300,000 single. On this basis, Canada has at least 700,000 unmarried men upon whom she still can draw for recruits. It is absurd that, with this large population of men without family responsibilities, there should be 100,000 married men in Canada's armies. Not only is it a social crime to enlist married men when the nation is apparently swarming with slackers in a state of bachelorhood, but it entails great expenditures, from both the private and the public purse. The Patriotic Fund canvasses the whole Dominion for money to support the dependents of her soldiers, who already receive the highest pay of any in the world, and Canada has started a pension system which promises to become far more extravagant and give rise to more frauds and scandals even than our own. Such expenditures would be greatly reduced under conscription.

But the voluntary scheme works great injustice not only between married and unmarried, but between different localities. Here, for example, are instructive figures; they show the enlistments in the several provinces and the contribution each province has made per thousand of population:

ENLISTMENTS UP TO DECEMBER 31, 1916

PROVINCES	NUMBER ENROLLED	ENLISTMENTS PER 1,000 OF POPULATION
Ontario.....	157,908	63
Quebec.....	41,729	20
Maritime Provinces:		
New Brunswick.....	34,802	38
Nova Scotia.....		
Prince Edward's Island)		
Manitoba and Saskatche-		
wan.....	77,254	81
Alberta.....	34,517	92
British Columbia.....	37,575	104
	383,785	

Now let us take a table that is even more suggestive. On January 1, 1916, Sir Robert Borden issued a call for 500,000 men. This, he said, would represent Canada's contribution to the cause. Public opinion in Canada enthusiastically endorsed this

call and regarded the quota demanded as reasonably representing Canada's contribution. Unfortunately Canada has not yet obtained these men; since recruiting, in the last few months, has almost ceased, there seems little likelihood that, under the voluntary system, she will ever obtain them. The failure to realize expectations is caused simply by the fact that certain parts of the country have shirked and attempted to shift the burden upon others. The first column in the following table shows the number of men which each section should have contributed to this 500,000, had each contributed in proportion to its population. The second shows the percentage of its allotment which each section has actually put into the field.

PROVINCES	PROPORTIONATE ALLOTMENT	PERCENTAGE OF ALLOTMENT ENLISTED
Ontario.....	170,213	93
Quebec.....	138,298	30
Maritime Provinces	65,957	53
Manitoba and Saskatchewan.....	70,213	110
Alberta.....	25,568	135
British Columbia.....	29,787	126

These figures have the utmost interest for Americans; they show precisely what would happen here, if we adopted the voluntary system. Certain sections of Canada have contributed more than their fair share; other sections have contributed less. Quebec makes the poorest showing, but it evidently is not the only province that has held back, for the Maritime Provinces—New Brunswick, Nova Scotia, and Prince Edward's Island—have furnished only a little more than half their allotment. Even Ontario, the great headquarters of Imperialism, has not furnished its 100 per cent., though its showing is more than respectable. Perhaps the fact that there are large numbers of unmarried men in these Western provinces—mostly immigrants from England—explains this showing, but such facts do not explain the discrepancy between the old established maritime provinces and Ontario. On the other hand, the Western provinces have done far more than their share. If Quebec had enlisted at the same rate as Ontario, it would have given the army not 41,000 men, but 128,000. Montreal, the largest city in Canada, has

enlisted 34,000, while Toronto, which is considerably smaller, has given 85,000. "We could get 500,000 easily if Quebec would do her duty," is the cry heard all over Canada. Only conscription can remedy such inequalities, but there is little chance of conscription in Canada, as it would produce an ugly situation in the great French-Canadian province. Fortunately the United States is a much more united country; we have no bi-lingual system, no religious schools supported at public expense, and no clerical problems.

INDISCRIMINATE ENROLLMENT

All the other faults urged against voluntarism likewise find their illustration in Canada. Recruiting has been haphazard, and has led to great wastage. The unit has been the battalion—about 1,200 men. Individuals have received authorizations to establish recruiting headquarters in different districts and such men, whose appointments have been in some cases political, have resorted to all kinds of methods in filling out their battalions. Frequently competition between such recruiting agents, operating at cross purposes in the same part of the country, led to the utmost confusion and waste of effort. The leaders have enlisted men from the mines, when the working of the mines was absolutely essential to the prosecution of war. They have taken recruits from the munition factories, where, of course, their recruits would be more useful than in the trenches. They have robbed the fields of harvesters whose work has been essential to maintaining Canada's greatest industry—her agriculture. There has thus been no intelligent effort to assemble the nation's resources and to fit each person into his particular niche. Most serious of all, the medical inspection has been faulty; so eagerly have the officers sought recruits that unfit men, apparently in large numbers, have slipped through. Not infrequently an ambitious recruit, rejected by one physician, would go the rounds until he found some one who, either through ignorance or indulgence, would certify to his physical well-being. As a result thousands of men have been sent to England who have gone to pieces there and been returned home. According to an

estimate made by Mr. Godfrey, president of the National Service League of Toronto, such wastage up to date amounts to 60,000 men. If that statement is accurate, we shall have to revise somewhat the official figure of volunteers. Instead of having enrolled 392,000 fighting men, Canada has furnished only 332,000; certainly no one would include 60,000 ineffectives as real contributions to the Allied armies, for these men become simply burdens, involving great trouble and expense.

THE TRAGEDY OF CANADA'S OFFICERS

Canada is complaining loudly at present of the treatment these battalions have received in England. While they were being enlisted, the recruits believed that their organizations were to be maintained intact. Localities naturally had particular pride in their battalions; brothers and friends enlisted together, believing that they would remain together at the front; and officers, many of them leading men in their sections, have organized their forces supposing that they would command them in France. The reality has furnished Canada the bitterest disappointment of the war. Modern military science pays no attention to sentiment; it takes men where it can find them and places them where they can perform the greatest military service. The Canadian forces in France have had heavy losses, and men have been constantly needed to fill out their depleted ranks. Consequently, the battalions, as soon as they have arrived in England, have been broken up. A few hundred have been taken to fill a certain gap in France; a few more hundred to fill another gap, and in this way the organizations have disappeared piecemeal. Thus men from Edmonton, instead of finding themselves fighting side by side with Edmonton men, have formed part of a miscellaneous force—nearly all strangers—from all parts of Canada. This is not so hard on the men—though they have complained loudly—but it has been a tragedy for the officers. The battalions have been so depleted that these men, in large numbers, have found themselves without commands—their men at the front are in the hands of English officers or in the hands of Canadians who have been

promoted—and properly promoted—from the ranks. These men left Canada under brilliant auspices; they were fêted and dined, and sent abroad with great applause and expectation. They gave up their business and professional careers to serve their country, but many are now wandering over England, or living in hotels in London, ashamed to return home. What explanation can they give for the greatest tragedy that can happen to an officer—the loss of his command? They cannot tell their people that the blame attaches to the fact that they were enrolled under an unscientific military system, and they are thus likely to be the victims of cruel innuendoes as long as they live.

SIR SAM HUGHES AND KITCHENER

In the production of equipment and munitions Canada has blundered along in most approved democratic fashion. This is perhaps not strange, when we remember that, at the outbreak of war, the Dominion possessed only one factory in which rifles were produced and had absolutely no establishments for making shells, guns, and other essential implements of war. From the first Canada has been extremely desirous of obtaining war contracts and watched with great jealousy the huge orders given in the United States. As soon as it demonstrated its ability to handle such contracts they came in large numbers. Up to date the Dominion has produced about \$700,000,000 worth of munitions. Unlike England and France, the Canadian Government has not taken over the munition factories, has not regulated earnings, and has not taxed munition profits. The Shell Committee, organized by Sir Sam Hughes for handling munition contracts, has furnished those scandals without which it seems almost impossible to conduct military operations. Two experiences illustrate the absurdity of attempting to conduct war without a scientific coördination of munition production. Sir Sam Hughes's incumbency as Militia Minister was one continued wrangle between his own vigorous personality and the British War Office. The tart telegrams exchanged between this somewhat obstreperous Orangeman and

Kitchener make rather entertaining reading. The chief source of the ill-feeling was caused by the fact that Canadian equipment, as soon as it arrived in England, was scrapped and supplanted by that of English make. The money wasted in this way amounted to millions. The wrath of Canadians over this summary treatment was so great, declared Sir Sam in Parliament, "that every man who came home invalided, and every letter from the front, talked of another Boston tea party." The explanation made by the British War Office—and it seems satisfactory—was that since all the Imperial forces worked as a unit, it was necessary that they all have the same equipment. The absurdity of the situation was that Canada should go on month after month, sending millions of dollars' worth of equipment to England, which was thrown upon the scrap heap as soon as it arrived.

THE BLUNDER OF THE ROSS RIFLE

The story of the Ross rifle likewise shows the necessity of unified action. At the beginning Canada took great pride in the fact that its Army was equipped with this rifle, which is the invention of a Canadian and which is manufactured in Canada. Yet the history of the Ross rifle has been a distressing one. It received its first test at the battle of St. Julien, in April, 1915, and failed wretchedly. Because so many of their rifles jammed, the Canadians found themselves fighting Germans with practically no means of defense, and probably a considerable number of the casualties are attributable to this fact. In June, 1915, Sir John French informed the Canadian authorities that the Canadian soldiers had lost confidence in their arm and were throwing away their Ross rifles whenever they could obtain Lee-Enfields "from casualties." Despite this, the Canadian militia office continued to send the Ross rifle to the front. In May, 1916, Sir Douglas Haig declared in an official dispatch, that there had been a "high percentage of jams with the Ross rifle during a hostile attack on May 1, 1916." That is, a year after Sir John French had informed the Canadian authorities that the Ross rifle endangered the

lives of Canadian soldiers, it was still being supplied to the troops. In August, 1916, the work began of equipping Canadian troops with the regulation British arm, the Lee-Enfield.

Conditions in munitions work have now improved, the Shell Committee has been abolished and a new agency, the Imperial Munitions Board, has been organized under the chairmanship of Mr. J. W. Flavelle. This board supervises all the Imperial munition contracts let in Canada. Under its direction munition plants have been established in every province, about 300,000 workmen are employed, and nearly \$1,000,000 a day is being spent. There is still much hard feeling in Canada because huge profits are paid to munition makers—a Montreal ammunition company has recently declared a dividend of 800 per cent.—but this does not overshadow the amazing energy with which Canada has transformed itself into a gigantic arsenal, almost overnight. There is practically no part of the country in which war supplies are not now produced. The remotest towns in Alberta and British Columbia are daily sending their shipments of war material to England.

FINANCIAL HELP

Perhaps Canada's greatest triumph is the financial support she has brought to the war. Sir Thomas White, Minister of Finance, seems to have made the greatest personal success of any man in the cabinet. The war, as already said, found Canada's economic position a weak one. Business was depressed and the debt to English bankers was large. Canada, even more than the United States, was a debtor nation, regularly borrowing about a million dollars a day in the English market. Though the Dominion's economic resources were extensive, the amount of liquid capital available was small. When the war began it was taken for granted that Canada, like France, Russia, and other of the Allies, would have to be materially helped from the Imperial Treasury. But Canada has developed unexpected financial strength. Like the United States, the Dominion has profited enormously from war orders. Her

position recalls that of Great Britain in the Napoleonic wars; then England, although herself at war, had great prosperity, largely owing to the fact that her own territory was not ravaged, that her farms—English agriculture was then important—were feeding the European armies, and that her factories were supplying them with munitions. Canadians have had an unexpected influx of money, and they have used it in enthusiastically subscribing to war loans. In 1915 the Government rather timorously offered its first loan—one for \$50,000,000; the response was so immediate and generous that the amount was increased to \$100,000,000. Last year it called for another \$100,000,000, which was also greatly over-subscribed. Besides this the Dominion Government has borrowed \$125,000,000 in New York, and the loans placed by Canadian provinces and municipalities in the United States have amounted to much more; indeed, Canada's credit stands so high on this side that her securities are eagerly snapped up by American investors, and we have practically taken the place of England in financing the Dominion. Besides these transactions, the Canadian banks have provided England with a credit of \$250,000,000 to pay for war munitions. In other words, Canada, instead of being financed by the mother country, is not only financing herself but is helping to finance England also. The war has already cost Canada about \$500,000,000, and she is spending now nearly one million dollars a day.

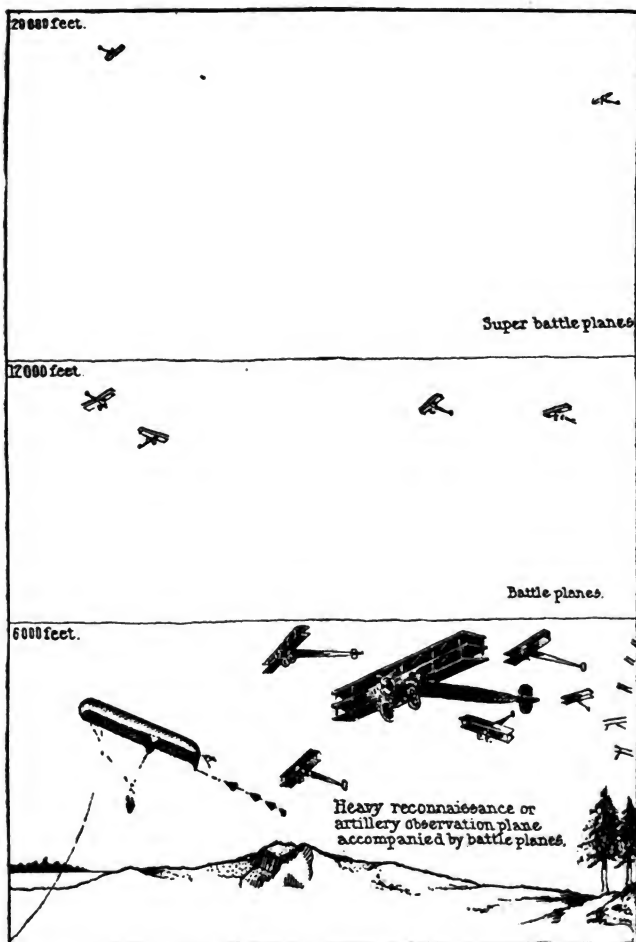
Despite this great strain, Canada shows every determination to see the thing through. Probably the quality that the United States could best imitate is the spirit of the people. Disloyalists and grafters there are, but they are a minority. It is to be hoped, if the American people get into the war, that we shall profit from Canada's mistakes and organize more scientifically our resources and our men. But we cannot show a higher devotion to what is every day regarded more and more as a sacred cause. Canada's spirit, combined with our infinitely greater resources, would quickly turn the scale in the European conflict.

WHAT YOU SEE AT THE FRONT

A PICTURE OF THE TRENCHES
AND WHAT ARE BEHIND THEM,
MADE BY DETAILED MAPS,
DIAGRAMS, AND PHOTOGRAPHS



THE BATTLEFIELD pictured is a typical trench line but not at a point of heavy attack. The maps, diagrams, and pictures give a fair idea of many places on the battle lines in Europe. But it is necessary to remember that while conditions in all parts of the line bear some resemblance to each other, trench conditions are not exactly the same in any two places.

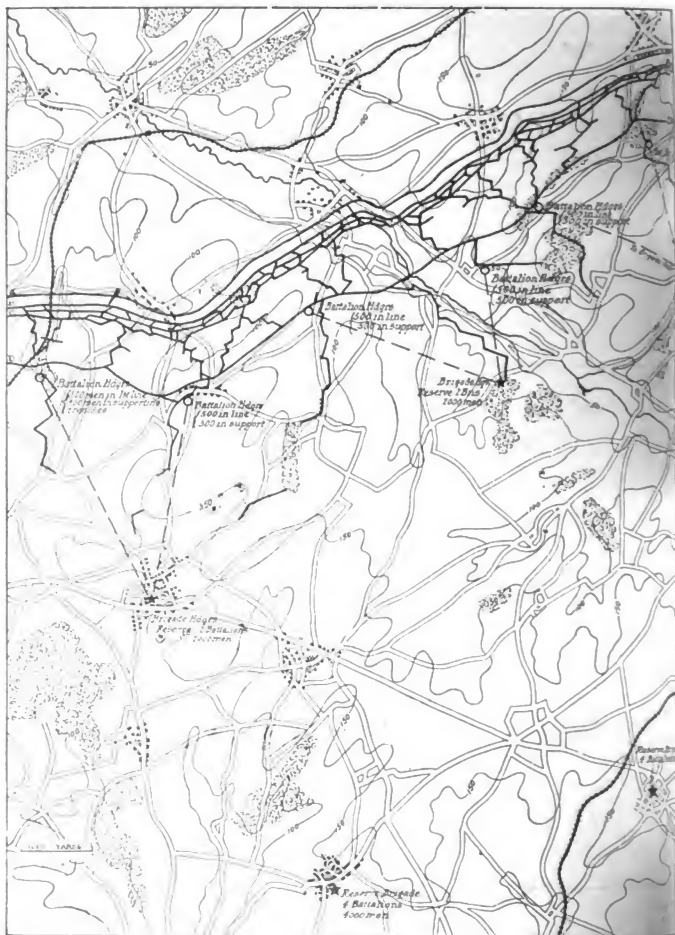


THE AIR-ZONES OF A MODERN BATTLE

From the ground up to 6,000 feet is the zone in which the heavy aircraft usually operate. They are used for artillery observation, for photographic work, and for bomb dropping. In this area also are the captive balloons which direct the fire of the heavy artillery. (See map on page 606.)

Between 6,000 and 12,000 feet is the zone of the

battle-planes that struggle for the mastery of their zone, which will give them an opportunity to attack or protect the slower machines and balloons below them. The improvement in machines during the last year has made possible a still higher zone in which what might be called destroyer-planes operate so as to have an advantage of position from which to attack.



A MODERN BATTLE FRONT

A typical section of trench line of about six miles showing (A) enemy first line, (B) first line, and the supporting and communication trenches behind, with the disposition and numbers of the troops in the first line, in support, and in reserve. A section of front held by one battalion (1,000 men) may be from 250 to 1,000 yards long, or more than half a mile. Half the battalion is in the first line and the other half in support in the other trenches. Behind these are an equal number of reserves at brigade headquarters,

and still further back another force equal to all men to alternate with them. For each man in the first line, there are seven others in reserve, not counting artillerymen, medical men, etc.

The contour lines, showing the ground elevation in metres (3.28 feet), are important, as they show the reason for the location of batteries, trenches, hospitals, etc. on this and on maps on succeeding pages. Parallel lines indicate roadways, heavy crossed lines are railroads, and shaded sections are woods.



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A MODERN BATTLE FRONT

Showing an attack. The men in the foreground leaving their trench, corresponding to "B" on the map on the opposite page, are charging toward the trench line, corresponding to "A," visible in the background of the picture



AN ATTACK—CROSSING "NO MAN'S LAND"

What the trench lines look like in a chalk country. The troops are leaving trench corresponding to "B" on the map and attacking "A" The supporting and communication trenches show plainly



ARTILLERY POSITIONS AND OBSERVATION STATIONS

The light batteries, marked "A," consisting of 3-inch field guns (18-pounder guns and 75-millimetre guns) and howitzers up to 4.5 inches, and the medium batteries, marked "B," of field guns up to 4.5 inches calibre (105-millimetre field guns, 60-pounders, and 155-millimetre howitzers) have their fire directed from observation stations (marked "Obs. sta.") and regulated by airplane observers. The heavy batteries are usually directed by balloon observation and regu-

lated by airplane observation. The batteries are usually placed behind the crest of a hill or under cover of woods and buildings and as often as possible where they can enfilade a part of the enemy's trench, as shown by the second "B" battery from the right, which has the railroad crossing and enemy's trench within range. Enfilading fire is more accurate than frontal fire, for the lateral error of artillery is from one third to one seventh as great as the range error.



AN OBSERVATION BALLOON LANDING

The balloons on the map on the opposite page are about two miles from the firing line. In practice they are pushed up as far forward as the control of the air will allow



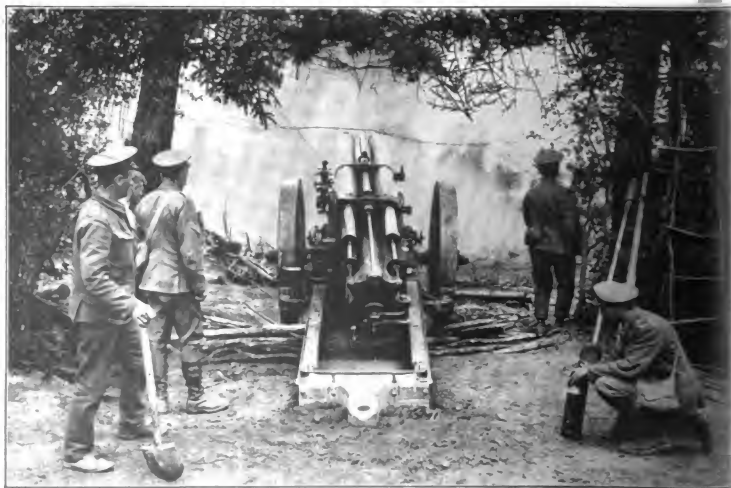
A HEAVY 6-INCH GUN

The fire of the heavy guns is chiefly directed by balloon observation. The usual position of the guns is from three to six miles from the enemy first line (see "C." on map on facing page). Their duty is to bombard and destroy supporting points, communications, dugouts and trenches, and headquarters if it can be located. The effective range of a 6-inch gun is about 15,000 yards



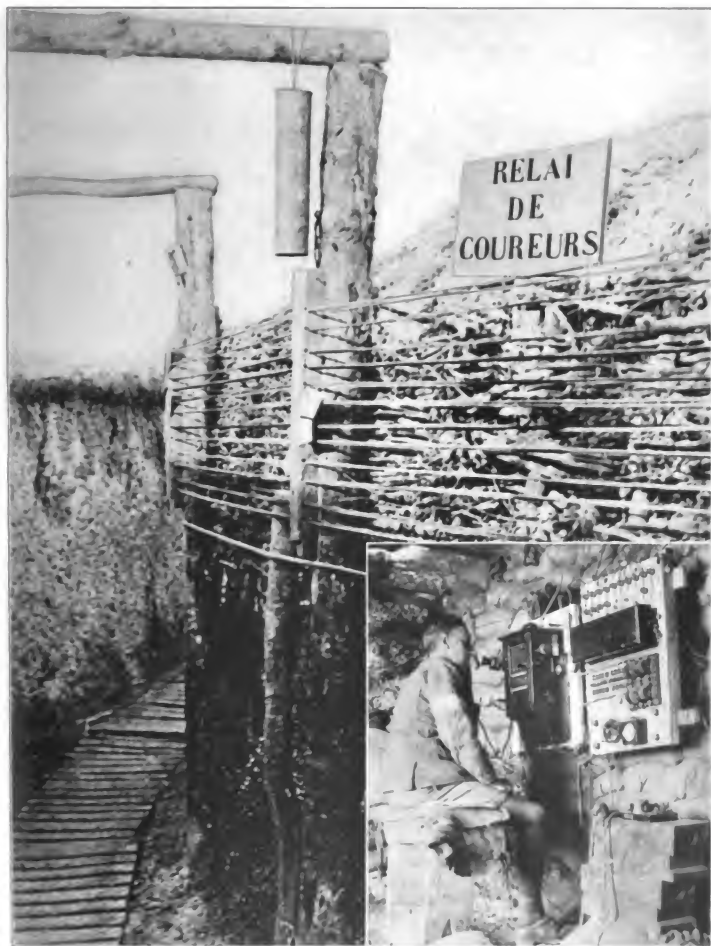
AN OBSERVATION STATION

They are placed anywhere—in buildings, trees, shell craters, etc.—from which the observer can see the effect of his batteries' fire and from which he can get wire communication back to his guns, and where he can report the movements of his own and the enemy's infantry. (Marked "Obs. sta." on map on page 606)



GUN OF A MEDIUM BATTERY

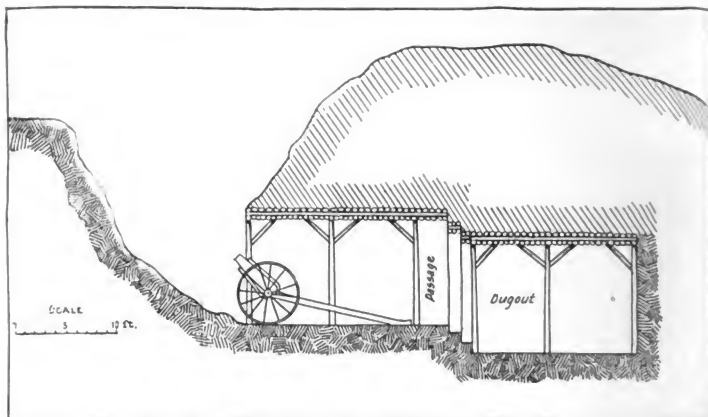
The gunners know the results of their fire only by reports from their observers. Medium batteries ("B" on map, page 606) are located from one to three miles from the enemy, and their task is to help destroy enemy trenches, try to put enemy batteries and captive balloons out of commission, and they are also used in barrage fire to cover attacks



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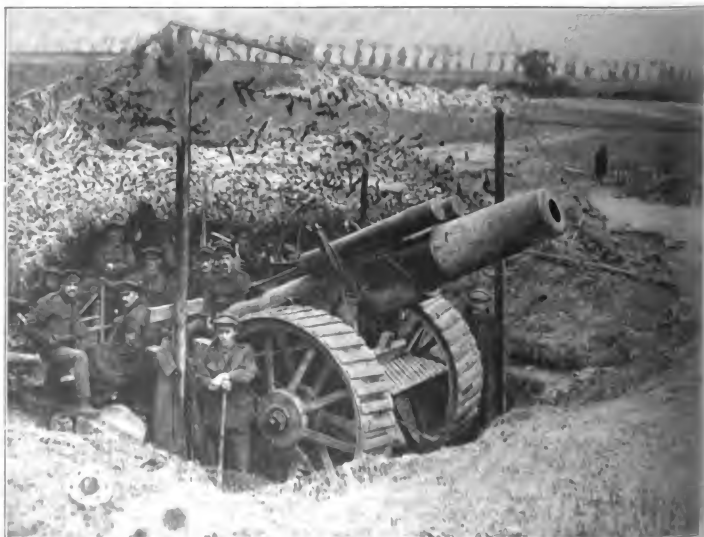
A COMMUNICATION TRENCH, TELEPHONE WIRES, AND GAS ALARM

A typical trench braced to prevent caving in, with the usual board walk and the great number of telephone and telegraph lines in a modern communication system. The shell case is struck as a warning for all to put on masks, when a gas attack is discovered. (*Inset*) A telephone exchange in a dugout which is part of the system of communications between the front lines and the headquarters in the rear



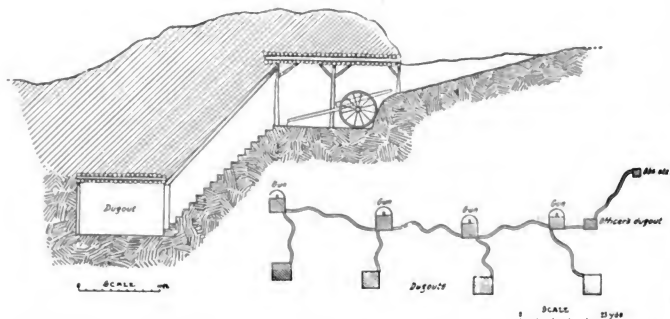
A DIAGRAM OF AN INTRENCHED HOWITZER

A plan often used to conceal and protect both the batteries and the men from enemy observation and fire. The gun crews live in the dugouts in the rear. In many of the gun positions on the map on page 606 this intrenchment would not be necessary, for the batteries and crews are placed in positions sufficiently concealed to protect them.



A HEAVY HOWITZER BEING INTRENCHED

Artillerymen engaged in placing a gun in a position like that in the diagram above. The position of the gun, or more particularly of the one above, will explain why it is difficult to move heavy artillery rapidly either to follow up an attack or to escape an advancing enemy.



AN INTRENCHED LIGHT BATTERY

A diagram of the protection of each gun and a map of a battery with dugouts for men and officers and communication trenches between and an observation station near by, as shown in the extreme right-hand light battery ("A") on map on page 606



A LIGHT GUN'S INTRENCHMENT

With the curtain that conceals it from aerial observation drawn. The second light battery ("A") from the left on the map on page 607 is intrenched in a town as in this picture. These guns are used to cut wire entanglements, destroy parapets, silence enemy artillery, and for barrage fire either with or without gas shells



TRANSPORTATION SYSTEM BEHIND THE LINES

When possible, broad-gauge railroads are utilized to within about ten miles of the line. They are often supplemented by motor transport, and this also carries to within three or four miles of the front and sometimes closer. Horse transport is used in the field trains of the troops up to the second line, where bearers take the material. The Decauville field railways supplement this system, especially for the trans-

porting of ammunition, and sometimes these lines reach into the trenches.

In this map the Decauville railways are shown reaching brigade headquarters, shown on the map on page 604, the different batteries shown on page 31 and a field hospital shown on page 616. In 40 times on the lines 18,000 men would take at least 20 tons of food, munitions, and accessories a day.



RAILHEAD: AMMUNITION AND STORES FOR THE FRONT

The map on the opposite page shows the railhead about ten miles from the lines. From here the railroad freight moves forward by motor and light railroad



FROM RAILHEAD TO THE GUNS

A light railway carrying ammunition. On the map opposite. These light railways serve several batteries, brigade headquarters, and the field hospital. (Compare with maps on pages 604 and 616.) They are run, when possible, behind hills or woods, out of sight of the enemy



MAN, HORSE, AND MOTOR

A bombing squad with its boxes of bombs approaching an entrance to the communication trenches as shown on map on page 612 and diagram on page 621. (Centre) Horse transport under conditions that the motor cannot meet. Carrying shells to the light batteries. (Below) From the bases to well beyond railhead and also for use between railhead and the motor limit (see map on page 612). The motor transports go in trains of cars of the same type and make and are sometimes linked together.



THE RED CROSS ON THE BATTLEFIELD

(Upper left) An aid station in the trenches (see map on page 616), where the wounded receive doctor's care and are prepared to be sent back to the dressing stations. (Right) A wounded soldier in the trenches, bandaged and ready to be taken to the aid station. (Lower left) From the dressing station to field hospital by bearer and (right) by horse ambulance. (See medical map on page 616 and compare with transportation map on page 612)



THE MEDICAL MAP OF THE FRONT

Men wounded in the front trenches or in "No Man's Land" are rescued by stretcher-bearers or comrades, given immediate aid with the first-aid packet, and then carried to the aid stations in the communication trenches, marked "A" (see also diagram on page 621). In many cases stretchers cannot be used because of the sharp turns in the trenches. From the aid stations the wounded are removed to dressing stations out of the trenches and from there either by bearers or horse ambulances to the field hospital. As soon

as they are well enough they are shipped by automobile ambulance or on the Decauville light railway to evacuation hospitals at varying distances behind the lines and by train to the hospitals in the large cities. The fundamental idea underlying the system is to accomplish each move away from the front as soon as the patient has been got into condition in which he can stand it. This map shows a typical arrangement, but under different conditions, of course, it varies greatly



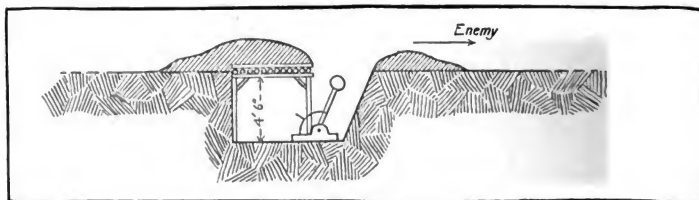
FROM FIELD TO EVACUATION HOSPITAL

A comparison of the transportation (page 612) and medical maps (page 616) will show a Decauville line from the village where the field hospital is to the evacuation hospital at railroad. The car has room for four stretchers hung on springs to soften the jars



A FIELD HOSPITAL

In a temporary building behind the battle front (see map page 616), where the seriously wounded are cared for until they can be sent back to the base hospitals



CONSTRUCTION OF PIT FOR TRENCH MORTAR OR BOMB THROWER



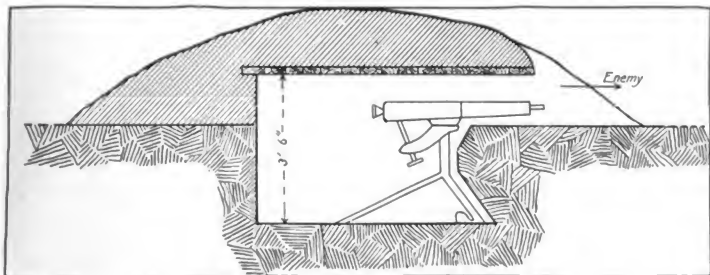
A TRENCH MORTAR WITH SHELL READY TO FIRE

Mortars are placed in various parts of the trench systems anywhere from 50 to 300 yards behind the first line (see diagram on page 621) and their high explosive shells are useful in demolishing enemy trenches



A MACHINE-GUN POSITION IN THE OPEN

Where the guns and men are protected only by small dugouts and shell craters—conditions which obtain during an advance



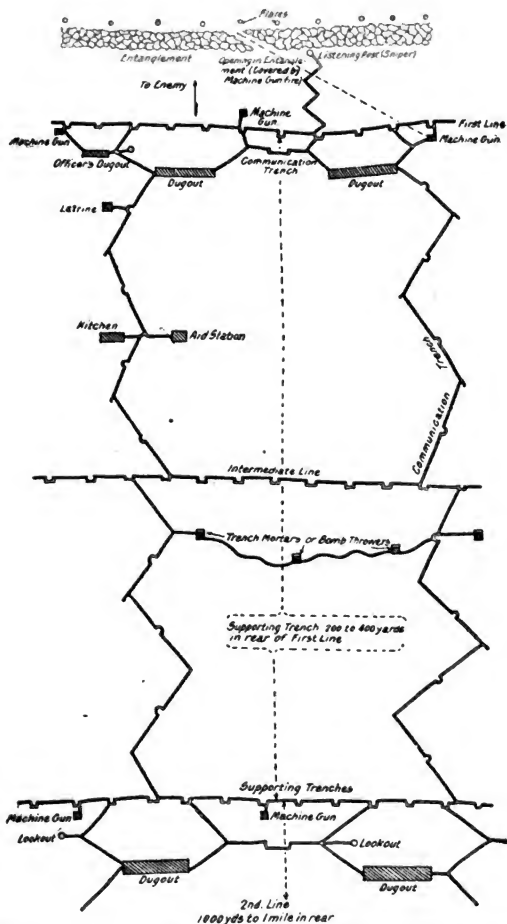
A MACHINE-GUN PIT WITH OVERHEAD COVER

The position of these pits is shown in diagram on page 621. They are concealed from the enemy and arranged so as not to fire straight in front but diagonally, in order to have more of the enemy in range



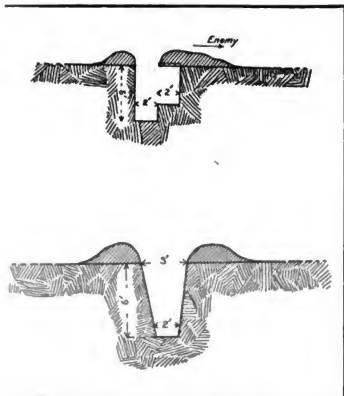
A HIDDEN AND DEFENDED MACHINE GUN

Which fires through the painted net curtain. Except for the noise, which resembles a pneumatic riveting machine, it gives no indication of its whereabouts to the enemy



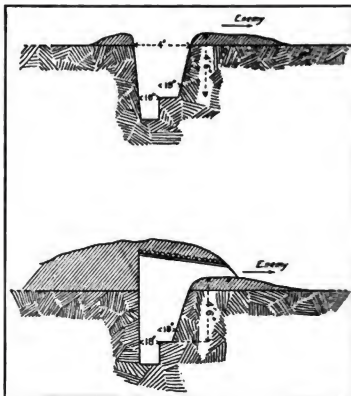
PLAN OF THE ORGANIZATION OF ABOUT 100 YARDS OF TRENCH

This small part of the front has caused the digging of three or four miles of trenches of all kinds, dugouts, mortar and machine-gun pits, and has to be equipped with telephone systems, aid stations, kitchens, and sanitary arrangements. This diagram shows something of the work entailed in organizing a position in modern trench warfare.



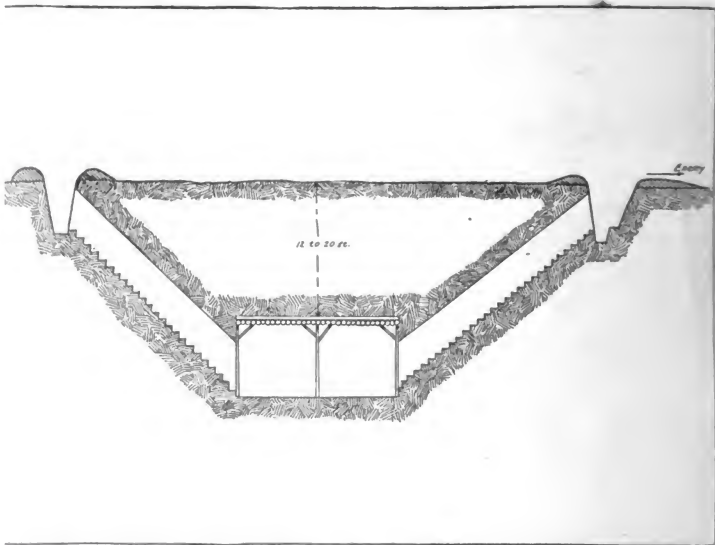
COVER AND COMMUNICATING TRENCHES

Cover trenches (above) used by men not firing. Communicating trenches connect the front line with the rear. Both are zigzagged, so no long section can be swept by enemy fire. (See page 621.)



FIRE TRENCHES

Unsheltered (above), showing the shelf on which the men stand to fire and the thick dirt parapet toward the enemy, and (below) a trench with a shelter against shrapnel, hand grenades, etc.



A FRONT-LINE DUGOUT

With the usual two outlets to prevent bombardment from burying the occupants alive. This is a simple dugout. Many are much larger and more elaborate.

IF GERMANY SHOULD WIN

THE EFFECT UPON THE UNITED STATES IF THE SUBMARINE CAMPAIGN AGAINST ENGLAND
SHOULD SUCCEED

BY

EDWARD G. LOWRY

HAVE you ever let yourself consider for a moment what would be the effect on the world, on this country, on yourself, if the Germans effectively blockaded Great Britain with their submarines and starved it into submission? It would rank with the most stupendous calamities that ever befell this troubled world. Not a man living but would feel the effect of it in one way or another. The very threat to attempt to enforce a blockade by committing murder at sight is a challenge to civilization and to the continued existence of organized society on this planet. If by any remote chance the Germans should prove successful there would be no peace and security in the world until the political ideas that dominate Germany were exterminated.

Put it to yourself this way: Suppose a man in your town said, "Whoever walks down Main Street, man, woman, or child, and upon whatever errand or mission, I will kill secretly and without warning." Suppose in carrying out this threat he planted dynamite under the sidewalks and concealed thugs with shotguns on roofs, behind chimneys, and in the upper stories of buildings in order to make his threat good. Would not that disorganize life in your home town? Would you endure it?

That is precisely what Germany is doing on the high seas to-day, and if she could succeed she would destroy the whole fabric of human society, intercourse, communication, and relations between peoples. Consider for a moment what effect her mere threat has already had upon the United States. Items: First, a newspaper dispatch from Boston dated February 19th: "Acting upon instructions received from Washington, Postmaster Murray

announced to-day that he had suspended the making up and dispatch of mails, both regular and parcel post, for Great Britain. This action was taken, it was said, because of the present uncertainty of steamship schedules." The Postmaster General, a member of the Cabinet, issues weekly an official leaflet giving detailed information about the transmission of mails. The issue of February 24th contains this postal information about transatlantic parcel-post mails:

Great Britain and Ireland—Sailings uncertain.

France—Sailings uncertain.

Belgium and Netherlands—Service suspended.

Germany, Austria, and Hungary—Service suspended.

Liberia—No sailing at present.

Greece—No sailing at present.

Gibraltar—Sailings uncertain.

Denmark—Sailings uncertain.

Sweden—Sailings uncertain.

Norway—Sailings uncertain.

Italy—Sailings uncertain.

The American Line steamship *St. Louis* was at New York preparing to sail when the German threat to murder at sight on the high seas was made. She had somewhere between 3,000 and 5,000 bags of mail on board consigned to Europe. The American line has been subsidized for years by the Federal Government as a mail carrier against just such an emergency. But the *St. Louis* did not sail. She turned over her mail bags to a British steamer, the *Cedric*. The *St. Louis* then lay in port, where she was joined by the steamships *Philadelphia*, *St. Paul*, *New York*, and *Kroonland* of the American Line. All these ships were lying in New York idle and terrorized by the Germans on February 24th. The president of the

line told the newspapers that the detention of the ships was costing his company \$100,000 a week. That is one little detail. The New York *World* made this pointed and truthful comment:

What has happened is that the Atlantic ports of the United States are blockaded by Germany, and our ship-owners are afraid to assert their legal rights. Even the American Line ships which carry the United States mail are held in port by order of the German Government.

We are doing precisely what Germany commanded us to do. Our merchant shipping is no longer under the sovereignty of the United States but under the sovereignty of the Imperial German Government. Germany says we must not sail the seas under the penalty of death, and we do not sail the seas. It could hardly make its orders more effective so far as Americans are concerned if its submarines had taken physical possession of our harbors and the regulation of our merchant shipping had been formally turned over to the German Admiralty.

Every day that American ships are afraid to put out to sea because of German defiance of law and civilization, our rights are invaded, our honor is sullied, and our power as a great nation is challenged before the world.

THE TIE-UP OF FREIGHT CARS

That is a truthful and restrained picture of the first faint effect upon us of a mere threat by the Germans to starve England by a policy of murder at sight in the sea. There are others. This report, for example, from the New York *Times* of February 11th:

Cars, cars everywhere, and not a ship to load—this is the literal truth about the freight yards, piers, and tracks in and near the Metropolitan district. The freight yards are literally full of cars, cars loaded to the limit with merchandise awaiting ships. Wherever cars could be hauled and left they were found—waiting until something happens. While steamship men are waiting to see what the German blockade will do, and while railroads are doing everything possible to prevent the arrival of more cars in the city, thousands now remain idle in the yards and on all track space not actually needed for moving trains. The impressive thing about the scene is the almost absolute stillness of everything. Cars and cars and cars—where, under usual circumstances, men would be busily engaged in un-

loading, engines in switching, and floats in carrying cars across the river—there is no activity at all—everything is dead and motionless.

Our exports last November were valued at \$517,900,000—a new high record. The United States entered upon the last month of the year 1916 with a foreign trade of \$7,148,000,000 for eleven months and with the prospect that the year's trade would approximate \$7,800,000,000 in value.

Practically every citizen of the United States has participated directly or indirectly in this flush of prosperity. Every citizen, directly or indirectly, will feel the effect of its curtailment.

ONE REASON FOR THE FOOD RIOTS

The inability to ship commodities abroad was a contributing element in dislocating the railroad service in the United States and, to that extent, the underlying cause of food riots in some of the big cities in February. A mere unsuccessful threat to starve England had these effects upon us in February. Everybody recalls what happened at the beginning of the war when the sea lanes were closed. Shipping sailings were cancelled then. The stock and commodity exchanges closed. Cotton could not be sold at 4 cents a pound. Wheat was embargoed. Then the sea lanes were opened again and wheat went up from 40 cents to a dollar and a dollar and a half a bushel. Cotton went up. Factories were reopened. Hundreds of thousands of idle men found employment. Wages advanced to new high levels. And why? Simply because the British Navy had reopened the sea lanes and ocean traffic was resumed.

These losses and these humiliations, it must be borne sharply in mind, were brought about by ineffective threats. It staggers the imagination to picture the effects upon the world if German submarines effectively should starve Great Britain. She would have to give up her fleet. The British Empire is based upon sea power. Sea power is based upon ownership of a great fleet, and therefore the British Empire would disintegrate. Canada, Australia, Egypt, India, would be

detached. And if Germany got the British fleet, what would we get?

Not invasion, for that would not be necessary. We would have to fight for the Monroe Doctrine with every ounce of our energy and power and all our resources. We would have to fight to prevent dictation of commercial terms. Even the grandiose German dream, for some of them have had it, of imposing an indemnity upon the United States to pay for the cost of the war might be faced in terms of actuality. Germany has never assented to the Monroe Doctrine, and she has sought more than once to impair it and break it down. Any one familiar with our foreign relations knows this. She has made attempts in Haiti and in Venezuela, to gain a permanent foothold. She has a great colonization project in Brazil. She looks to establish herself in South America. The stories of these attempts are familiar. Some of them were told in the March number of the *WORLD'S WORK*. It is needless to go into them at this time. A student of foreign affairs at Washington used this striking figure the other day, "Uncle Sam for the last fifty years has had the greatest navy in the world to maintain the Monroe Doctrine, but the greater part of it was in his mother's name." Is it necessary to explain that he had the British Navy in mind?

THE BRITISH FLEET AND HUMAN DESTINY

Consider this dramatic fact: There are between twenty-five and forty fighting ships, with their auxiliaries, flying the British flag, now lying at naval bases along the North Sea coast of Great Britain, that control the food supplies of millions, the rate of exchange all over the world, the political destinies of hundreds of millions, and the growth or decay of democracy on this planet. If by hook or crook the Germans could destroy the British heavy battleship fleet in a night the whole direction and destiny of humanity would be changed. The downfall of the Roman Empire was a momentous event in the history of the world, but it was gradual. Society had opportunity to accommodate itself to its changes.

But the fate of this world as it is organized to-day hangs on that little group of engines of war off the north coast of Scotland and the men who control it. They mean more to us and to posterity than any one quite realizes. Verdun and the Berlin-Bagdad ideas, great conceptions as they are, dwarf into trivialities. Should this little group of floating gun platforms fail in its appointed task, we would feel the effects, next to Great Britain, more than any country or people in the world. It would mean that England would be starved into submission. It would mean that we would probably lose all the money that we have lent to England and all that she owes us. It would mean a financial panic such as the world has never seen. Credit would dry up. Exchange would break down. All the fabric of international commerce would be destroyed. All the relationships that have been established between nation and nation and people and people would have to be reconstructed on a new basis. It would mean nothing less than the reconstruction of the civilization of the whole world. Every trade route, every financial arrangement, every political agreement, and every international policy would have to be modified and shaped to meet the new and unreliable conditions. No finite vision can comprehend in definite, actual terms the extent and full effect of such a calamity. It is worth thinking about and worth speculating about here in the United States, remote as is the possibility, if it brings home to the people here how closely our destinies in the world are linked with Great Britain's. The two countries are indissolubly bound together in this world. Their fortunes cannot be separated. They must fail or prosper, rise or fall, together. Neither can go ahead at the expense of the other. Every day since this war began has proved that. If the United States had not supplied Great Britain and her allies from our financial, industrial, economic, and agricultural resources the war against Germany could not have been waged as it has been. If Great Britain, through the employment of her sea power, her fleet, had not kept the sea lanes open, the condition of stagnation that came at

the outbreak of the war would have prevailed, only to a lesser degree, to-day. We should have had no market for our produce and we should have suffered. We would have been isolated. Our activities would have withered. Factories would have been closed. Hundreds of thousands of idle men would clamor for employment. You can draw the black picture for yourself of what would happen if this country's activities were arrested and crippled.

GERMANY'S LAST CARD

Murderous attack on sea traffic is not to be thought of merely as an academic problem or as an attempt to blockade England. When the Germans declared that, throwing aside all considerations of conscience and the sense of duty imposed by the principles of humanity, they would begin a ruthless killing campaign at sea, they in effect declared war against the United States. No "overt act" was needed to make the declaration complete. After the sinking of the *Lusitania*, the *Arabic*, and the *Sussex*, Germany gave promises and pledges to respect the rights of neutrals at sea. Now it has determined not to keep those promises. It staked its future and its right to be considered as a community of civilized human beings on the success of its submarine campaign. Like a wild beast at bay, it is making barbarous warfare. If it loses, it becomes a pariah in the civilized world and should be ostracized by the civilized nations. It is Germany's last throw of the dice. The nation is playing for a great stake.

The submarine is the veto power of the sea. It is purely obstructive and destructive. It contributes nothing to wealth or civilization. It is in a class apart from other craft. The other forms of water craft can be used and are used to make the world a better place to live in. They convey merchandise and passengers. They serve as a means of communication between nations and peoples. The submarine is a mere killer. It cannot even fight. It must kill furtively and secretly, like an assassin.

The Germans have staked their place in the world upon their belief that this

weapon, sufficiently multiplied, can disorganize and destroy sea traffic. If they are right, sea power, as it is understood to-day, will become a thing of the past. There can be no mastery of the sea. If submarines can be so used as to starve England, then England loses her supremacy in the world and becomes a fifth-rate Power. If Germany's ruthless submarine blockade can prevent merchant ships from moving from one country to another, then no country is immune from isolation. Submarines cannot fight submarines. If submarines can prevent food from reaching England, no matter how many thousands of them Great Britain may build, it cannot protect food ships against belligerent submarines. The alternatives would be submarine merchantmen or a revision of the international code governing the rights of ships at sea.

Mr. Lansing recently submitted to the American Institute of International Law a proposed revision of the international code which would exempt private property at sea, whether belligerent or neutral, from capture, except in the case of contraband. And if the submarine should prove an effective blockading weapon some such code would have to be accepted. At the Hague Conference of 1907, Mr. Joseph H. Choate made a long argument for the immunity of all private property at sea except contraband, but he had to admit that "the United States has never been able to put this policy into practical operation."

GERMAN DECLARATIONS AT THE HAGUE

The whole tendency of modern warfare had been toward a reduction both of its terrors and its inconveniences to neutrals and non-combatants, until the Germans began showing the world what "ruthless" warfare meant. It was at this Hague Conference that the German naval delegate expressed his abhorrence of the infamous practice of strewing mines in the open sea. He gave these pious assurances: "Conscience, common sense, and the sense of duty imposed by the principles of humanity will be the safest guide for the sailor's behavior and will constitute the most effective guarantee against abuse.

The officers of the German Navy, let me publicly affirm, will always fulfil in the strictest manner the duties which proceed from the enlightened will of humanity and civilization." The war had hardly begun before the Germans began strewing mines on all the main traveled sea lanes to which they had access, without regard to neutrals or belligerents. It was pointed out at that time by the British Admiralty that "mine laying under a neutral flag and reconnaissance conducted by trawlers, hospital ships, and neutral vessels are the ordinary features of German naval warfare."

The United States has lost about 30,000 tons of its shipping from German mines and submarines since this war began, and the European neutrals about 990,000 tons. These ships have been destroyed going to and fro on the face of the waters on their ordinary business and at places where they had a perfect right to be.

FOR A GREAT AMERICAN AWAKENING

It may be that this effort and attempt on the part of the Germans to sink every ship approaching Great Britain and to murder without warning every man, woman, or child aboard such ships will serve to make clear to all that vast body of the people living between the Appalachians and the Rockies what the Allies mean when they say they are fighting our battles. A little while ago I made a zig-zag journey across this continent, covering most of the populous states, and I found everywhere people puzzled and curious about this protestation so frequently made by the French and the British. Everywhere I was asked, "What do they mean when they say they are fighting our battles? What stake have we got in this war? We are sympathetic with the Allies and we abhor the stories of German atrocities in Belgium and France that we have heard. But why should they say that this is as much our war as theirs?" The events of the month of February ought to answer these questions to the satisfaction of even the dullest intelligence. On Saturday, February 24th, reports came that the Germans had torpedoed without warning in the British Channel seven Dutch mer-

chant ships with capacities aggregating nearly 33,000 tons. Some of these ships were bound from one Dutch port to another; others were bringing food from abroad for the Dutch people and consigned to the Dutch Government. They were not in any way assisting any of the nations now at war with Germany. They were engaged in the purely legitimate and commercial pursuit of bringing food to the Dutch. The Dutch are neutrals; they have suffered much from this war. These seven ships were approaching their home ports in Holland under the assumption that assurances they had received from the German Government that the ships would not be disturbed would be fulfilled. The *Dutch Gazette* said by way of comment:

It is doubtful whether the Foreign Minister ever had to face greater danger than now. Dutch ships must sail the seas. Otherwise stagnation and ruin will result. Germany is definitely committed that our ships shall not sail or only at prohibitive cost.

The German Legation at The Hague issued a statement saying that the torpedoing of these seven Dutch merchantmen was due "to an extremely regrettable coincidence of circumstances which is unfortunate, but was beyond our control."

But for the accident of geography these seven peaceful Dutch ships might have been American ships. Some of those torpedoed ships were loaded with foodstuffs for cattle. The loss of this fodder, the dispatches say, meant that the Dutch had to kill a large number of Holland's cattle. That we do not suffer as acutely as the Dutch is not due to any fault or lack of desire on the part of Germany. She would cripple us as effectively as she has the smaller neutral states if she could.

OUR DESTINY IF GERMANY WINS

The United States has more at stake in the present situation than England had when she went into the war, with France and Russia, in defense of Belgium. France and Russia and Great Britain are acutely conscious of our stake in the war. So is Germany. If the people of the United States do not see it and do not act up to their responsibilities, we shall have in the

world after this war is ended a place of intolerable humiliation and shame. This is not a mere assertion of opinion. It is a fact as demonstrable as the simplest proposition in mathematics. The Germans deny our right to send ships to sea. For twenty-six days in February they had made that denial effective. It was on February 26th that the President went to Congress with this plea:

I request that you will authorize me to supply our merchant ships with defensive arms, should that become necessary, and with the means of using them, and to employ any other methods or instrumentalities or methods that may be necessary and adequate to protect our ships and our people in their legitimate and peaceful pursuits on the seas. I request also that you will grant me at the same time, along with the powers I ask, a sufficient credit to enable me to provide adequate means of protection where they are lacking, including adequate insurance against the present war risks.

. . . It is not of material interests merely that we are thinking. It is, rather, of fundamental human rights, chief of all the right of life itself. I am thinking, not only of the rights of Americans to go and come about their proper business by way of the sea, but also of something much deeper, much more fundamental than that. I am thinking of those rights of humanity without which there is no civilization.

If the Germans were to be allowed to make completely effective the threats to deny us the free use of the high seas the whole civilized world would cease to reckon the United States among the first-class Powers. Every selfish interest of the United States demands that we should assist Great Britain to the full extent of our power in endeavoring to make the German campaign of murder at sight on the seas ineffective. England may, and probably will, succeed by her own unaided efforts in smashing the German plan. If she succeeds without our help, what will be our moral position in the world? How much prestige would we have left? Just about as much as Korea.

The destruction of Great Britain's sea power at this juncture would be the most calamitous thing that could happen to the United States. That Great Britain should retain her position in the world is of much

more concern to us than it was England's concern that Belgium should not be stamped out of existence. Our rights are invaded much more outrageously than were England's when Belgium was entered by the German troops. The new German sea campaign does not raise a question whether we should enter the war on the side of the Allies. It is not the rights of other nations that are involved. It is our own rights. Abandoning all pretense and all pledges, the Germans have invaded our national rights just as they invaded Belgium. They have committed acts of war against us and have dared us to resent them. For at least twenty-five days the gage of battle they threw down was not taken up. While affairs hung in this shameful posture, Senator John Sharp Williams, of Mississippi, declared on the floor of the Senate that ruthless submarine warfare was in itself an overt act and that "the President was ready to ask Congress for authority to use any means that may be necessary for the protection of our people and our seamen in the prosecution of their peaceful errands on the high seas," but that "somehow there has been implanted the idea that the American people are not united and that the Germans may expect aid on our own shores whenever they assassinate our women and children on the high seas." This illuminating interchange then occurred:

SENATOR BORAH: "I understood the Senator to say that the President was impressed with the idea that there was a division of sentiment."

SENATOR WILLIAMS: "I did not say the President; I said Germany."

SENATOR BORAH: "Is there anything in the situation of which the President is cognizant that would lead Germany to believe that there would be any division of sentiment among the American people in protecting their rights?"

SENATOR WILLIAMS: "Why, yes, a thousand things, from Bryan down to ninepins; debates upon this floor, debates upon the floor of the other House, attacking the President for what he has done, which was the least that he could do—to sever diplomatic relations. It is as if the Senator from Idaho had kicked me once, and then had kicked me again, and then had kicked me for the third time, and

then advertised to me publicly in a letter that he was going to kick me a fourth time, and as if I had then said, 'Well, I will quit speaking to you.'

The success of the German threat and attempt to run amuck on the high seas would, if successful, be the deadliest blow that could be inflicted on our ideals, our institutions of government, and our habits of thought. If made unsuccessful without our participation as a resistant, the whole fibre and fabric of our national being would be weakened to a degree now incalculable. President Wilson was speaking with a restraint, an austerity, a detach-

ment, and a lack of emotion that few could command when he told Congress:

It would be foolish to deny that the situation is fraught with the gravest possibilities and dangers. No thoughtful man can fail to see that the necessity for definite action may come at any time, if we are in fact, and not in word merely, to defend our elementary rights as a neutral nation.

No one doubts what it is our duty to do. We must defend our commerce and the lives of our people in the midst of the present trying circumstances, with discretion, but with clear and steadfast purpose. Only the method and the extent remain to be chosen, upon the occasion, if occasion should indeed arise.

WHAT THE COUNCIL OF NATIONAL DEFENSE IS DOING

TO "RENDER POSSIBLE IN TIME OF NEED THE IMMEDIATE CONCENTRATION AND UTILIZATION OF THE RESOURCES OF THE NATION"

THE creation of the Council of National Defense and its Advisory Commission is the one big piece of constructive preparation for war that has been accomplished by the Government of the United States. The job of the Council is to translate an aspiration into an actuality. It is not charged with the duty of laying down a policy of national defense but of discovering what our resources for defense are and determining how they can be most usefully and effectively employed. Its appointed task is to do before hostilities begin what the unprepared democracies of France and Great Britain had to do after they began to fight a fully prepared and aggressive Power. It is quite possible that this generation will never know the full cost in lives, blood, and money that France and Russia and Great Britain have had to pay because they had not taken any comprehensive measures of precaution against prepared and premeditated German aggression. The Council of National Defense cannot offer any immunity from the evils of unpreparedness in any present emergency. It is just getting under way,

making plans, doing preliminary work, effecting a working organization to carry out its purposes. Few people seem to know anything about the Council and its place in the national scheme of things. It is confused in the public mind with the scores of private organizations of mushroom growth that have sprung up under high-sounding names and are for the most part ineffective on any practical lines, but serviceable in arousing public opinion.

The Council of National Defense was created by the Army appropriation bill of 1916. It consists of six members of the President's Cabinet: Baker (War), president; Daniels (Navy), Houston (Agriculture), Lane (Interior), Redfield (Commerce), and Wilson (Labor). This Council was directed by Congress to nominate to the President an Advisory Commission of seven persons "each of whom shall have special knowledge of some industry, public utility, or the development of some natural resource, or be otherwise especially qualified." These seven members of this Advisory Commission are Messrs. Daniel Willard, president of the Baltimore & Ohio Railroad, Samuel Gompers, president of

the American Federation of Labor, Howard E. Coffin, vice-president of the Hudson Motor Company, Julius Rosenwald, president of Sears, Roebuck & Company, Bernard M. Baruch, Dr. Franklin Martin, and Dr. Hollis Godfrey, president of the Drexel Institute. The duties of this Council and Commission are best defined by President Wilson:

The Council of National Defense has been created because the Congress has realized that the country is best prepared for war when thoroughly prepared for peace. From an economic point of view there is now very little difference between the machinery required for commercial efficiency and that required for military purposes. In both cases the whole industrial mechanism must be organized in the most effective way. Upon this conception of the national welfare the Council is organized, in the words of the act, for "the creation of relations which will render possible in time of need the immediate concentration and utilization of the resources of the Nation." The organization of the Council likewise opens up a new and direct channel of communication and coöperation between business and scientific men and all departments of the Government, and it is hoped that it will, in addition, become a rallying point for civic bodies working for the national defense.

The Council's chief functions are: The coördination of all forms of transportation and the development of means of transportation to meet the military, industrial, and commercial needs of the Nation; the extension of the industrial mobilization work of the Committee on Industrial Preparedness of the Naval Consulting Board. Complete information as to our present manufacturing and producing facilities adaptable to many-sided uses of modern warfare will be procured, analyzed, and made use of.

One of the objects of the Council will be to inform American manufacturers as to the part they can and must play in national emergency. It is empowered to establish at once and maintain through subordinate bodies of specially qualified persons an auxiliary organization composed of men of the best creative and administrative capacity, capable of mobilizing to the utmost the resources of the country.

The idea of a Council of National Defense grew out of the work of the Naval Consulting Board, a body of civilians with Mr. Thomas A. Edison at its head, appointed by Secretary Daniels to assist

the Navy Department in solving its problems. The Council has set to work with commendable vision and thoroughness to lay a broad and real foundation for its work. It has realized from the beginning the immensity of its job and has taken it seriously. Toward the end of January and during the period of "low visibility" after the break with Germany, daily sessions were held and the foremost men in finance, science, manufacturing, and other lines of endeavor who might be supposed to have knowledge of the industrial and economic resources of the Nation came to Washington to tell what they knew.

PROBLEMS FOR THE ADVISORY COMMISSION

The Council and Advisory Commission established offices in Washington and put a staff of experts to work, with Mr. W. S. Gifford, of the American Telegraph & Telephone Company, in charge as director. This list of committees of the Advisory Commission will give some indication of the lines on which its inquiries are being directed:

- Medicine, including general sanitation;
- Labor, including conservation of health and welfare of workers;
- Transportation and communication;
- Science and research, including engineering and education;
- Raw materials, minerals, and metals;
- Munitions manufacturing, including standardization and industrial relations;
- Supplies, including food, clothing, etc.

Here is one of the problems set by the Advisory Commission which is now being worked out:

The Advisory Commission suggests to the Council of National Defense that it is necessary for the further progress of its work that detailed lists of materials with specifications and detailed-dimensioned blue prints, where such exist, be immediately furnished the Commission covering all equipment needs for a million men, assuming that this force is a balanced force, and for the assumed force of the Navy and Marine Corps with its numbers increased to emergency strength.

We also desire estimates of reasonable accuracy covering the maintenance of a force of the size mentioned above in the field during each ninety days of active service.

This information is requested in order that approximations may be made as to amounts of material both manufactured and raw for which it will be necessary to draw upon the resources of the country.

We shall appreciate it if the Council of National Defense will transmit this request to all bureaus and divisions which may be able to supply such information, and then send this information to the Director of the Council for transmission to the different committees.

It is doubtful in the extreme whether any officer or official of the War Department or the Navy Department is competent to furnish accurate information or even reasonably accurate estimates in response to this inquiry. Our two military Departments have not had any experience in planning for supplies and equipment for the maintenance of a million men. It is not only doubtful whether they would know how much such a force would need, but it is certain they would not know where to procure the necessary supplies and equipment of all sorts. The response to this request will be valuable as showing just what capacity for enlargement exists in the present organization of the Army and the Navy.

MR. WILLARD AND THE RAILROAD PROBLEM

Another thing that has been done is to request the Chamber of Commerce of the United States to have a small committee appointed in each of the cities in which the Quartermaster's Department of the Army has headquarters, to advise and assist local quartermasters, in case it may become necessary, upon short notice, to make purchases in unusually large quantities. President Daniel Willard, of the Baltimore & Ohio Railroad, who is virtually giving up all his time to this volunteer work of the Advisory Commission, is making a survey of all the transportation systems of the United States. He seeks to discover the quantity and character of all railroad equipment, the strength of all the railroad bridges, where all the heavy grades are on the main line railroads, so that after all the information is collected it will be possible to say with certainty how many troops can be moved and what quantity of supplies can be moved, at what speed, and by what routes. The problem will

be solved in practical terms. For example, how many engines, how many cars, how many trains, and how many days will be required to move 12,000 men from Memphis to Plattsburg, or from Chicago to Fortress Monroe, or from New Orleans to Baltimore, or from Atlanta to Portland, Ore. When the troops and supplies have been moved, how will the empty cars be disposed? By what routes will they be distributed? The plan is to make the railroads not only a national resource but an organized national resource. Thus, on March 1st, seventeen railroad executives, including the presidents of many of the largest lines, met in Washington to discuss plans by which their roads could be dovetailed into the workings of the four military districts of the United States. On the same date, officers of four of the largest interests in electric railways met with the general committee of the Council, the Secretary of War, and the Chief of the Army War College to work out a correlation of electric railway transportation with the broad work of the Council.

The Council of National Defense faces two main lines of procedure. It may first evolve and lay down a national policy of preparedness and then seek to discover the personnel, the material, and the economic and industrial resources to put that policy into effect and to maintain it. Or it may make a survey and investigation to discover what are the economic and industrial resources of the United States as a basis for a policy of defense. An intelligent policy of national defense must be based on an adequate knowledge of resources organized for effective use.

NITRATES AND AMMUNITION

Take the concrete problem of nitrates. Congress has appropriated \$20,000,000 to erect a nitrate plant. Everything necessary to produce powder in abundance exists within our continental borders except nitrate salts. At present these are indispensable, and the sole source is the Chilean output. The fixation of atmospheric nitrogen or its adequate production by any practical manufacturing method has not yet been done in this country. It can and probably will be done, but that

requires time, and a great deal of time. Meanwhile, it seems a public duty to secure and store nitrate of soda in ample quantity to meet our ammunition needs for at least a year or two of continuous war. It does not deteriorate in storage, and if not needed for powder its commercial use is assured. The powder output is easily increased, as illustrated by the experiences of the Du Pont Company. The capacity of that company up to October, 1914, was not more than 10,000,000 pounds per annum. By January, 1915, the output reached 950,000 pounds per month; by April, 3,000,000 per month; by January, 1916, 20,000,000 per month; and its present production is probably 30,000,000 pounds per month, or more. In addition to powder, this company is turning out very large quantities of gun-cotton.

THE COMPLEXITY OF RIFLE MANUFACTURE

Or again, take the manufacture of rifles. A board appointed by the Secretary of War has reported that the Springfield rifle has more than a hundred parts and it requires more than 1,400 distinct factory operations to produce the finished piece. The experience of our most highly organized and best equipped plants in carrying out European orders for military rifles is a lesson that the Council of National Defense has taken to heart. The lack of correct specifications and drawings, followed by the lack of correct gauges, jigs, special fixtures, and tools, not merely caused delay in arriving at a satisfactory output, but caused a large wastage of time and labor upon unsatisfactory products. The plants that are now turning out foreign rifles after two years of hard work have not yet reached their expected capacities. To turn these private plants from the manufacture of European rifles to the manufacture of the Springfield rifle would, if undertaken to-day, require not less than eighteen months to get first results and at least two years to get capacity output.

There are now five plants manufacturing military rifles in this country, but none of them is equipped to manufacture the Springfield rifle, and it would require a completely new set of gauges, jigs, fixtures, and tools to enable any of them to do

so. The cost of this new equipment appears to be about 20 per cent. of the total cost of the plant. These private plants are not well located either with respect to safety or convenience. It is questionable just how far arrangements can be advantageously made for educational units in this particular line.

TO TRAIN AN INDUSTRIAL ARMY

The more immediate problem of the Council of National Defense is industrial and economic preparedness as contrasted with military preparedness. In this field the Council has already discovered that in many respects the United States is more advanced than even the most highly organized of the belligerent nations in Europe. It takes about ten or twelve months to turn out a fairly competent trained soldier, but it takes years to train a good tool-maker. We have many more good tool-makers in this country than we have good soldiers. As Mr. Howard E. Coffin wrote last May in the *WORLD'S WORK*.

The test [in Europe] has gotten down to which country can fastest and longest supply the munitions of war to the men on the fighting line. It has gotten down not to the point of professional fighting men but to the question of whether every man, woman, and child of the nation has been engaged and is engaged in the production of some kind of materials for the armies at the front. It has even gotten to the point where the women of the leisure class are going into the mills and the factories at Saturday noon and working in seven-hour shifts until midnight of Sunday, in order that the mills may not be closed down during the time that organized labor stops work for its period of rest. When the problem of warfare comes down to this basis, it is no longer a question of the ability of the departmental heads of the Army and Navy, but it is a question of the ability of every bit of industrial brains in the country. . . . Now it is the skilled mechanic of the future who is going to win the wars of this country, because he is the man who is going to produce those munitions in such quantities as will be used by the fighting line, whereas the banker, if you like, and the lawyer is merely a man who carries a gun at the front—as they put it abroad, is cannon fodder."

Sir Douglas Haig, commander-in-chief of the British armies in France, is re-

ported to have said last year: "It takes five first class men behind the lines to keep supplied with his necessities every fighting man in the firing line."

ALL BRITISH TRADES MAKING MUNITIONS

It is the problem of the Council of National Defense to have this great industrial army that will never go to war as thoroughly organized and as completely trained and drilled and in readiness as any regiment of "regulars." That means a great conversion of industry. The time to make this conversion, to plan it, to arrange it, and to test it is before war begins. The experience of England proved that the preparation and supply of munitions and equipment is the most important department of the Government in time of war. When Mr. Lloyd George in England undertook to organize the Ministry of Munitions a glazier began to stamp out cartridge-clips; a manufacturer of music-rolls used his equipment to make gauges; a concern engaged before the war in preparing infants' food began delivering plugs for shells; an advertising agency manufactured shell-adapters; watchmakers began adjusting fuses; a manufacturer of baking machinery became a contractor for six-inch high-explosive shells; a jewelry house devoted itself exclusively to periscopes; a phonograph concern sent millions of delicate shell parts to the assembling stations; a firm which made nothing but sheep-shearing machinery started turning out shell-cases; a cream-separator factory manufactured shell-primers. Among other producers of finished shells were candle-makers, flour mills, tobacco manufacturers, syphon-makers, and the manufacturers of sporting goods. The Government prevailed on a firm making textile machinery to take an order for field kitchens. In an amazingly short time they completed the delivery of what quartermasters described as the finest field kitchens they had ever had. Thus encouraged, the Ministry of Munitions prevailed on the company to begin the manufacture of 4.5 inch shells.

One of the surprises of this war has been the successful employment of women as munition workers. In many of the plants and factories at the lighter work inexperi-

enced women have proved themselves able to turn out a greater quantity of material than skilled men. Mr. Lloyd George has mustered more than 195,000 women into the munitions industry and has had them taught some of the most intricate processes of shell-making. One young dressmaker who volunteered was put at a machine which was supposed, in the hands of a good workman, to turn out thirty shell-parts an hour. This woman's output is now seventy-five an hour. Another expert is a young typist who had five brothers in the army. This girl is now a most expert machinist.

THE "ANNUAL ORDER" PLAN

In Germany before the war many manufacturing plants were required in time of peace to devote a certain period each year to turning out munitions. The experience gained in time of peace enabled these factories to be converted into munition plants immediately and without friction upon the outbreak of war. The Council of National Defense has under consideration putting into effect some such plan in the United States. Take, for example, the manufacturers of cash registers. This industry is well organized. It employs under good factory conditions thousands of skilled men. On the outbreak of war the commercial demand for cash registers might be expected to dwindle away at once to almost nothing. If plans now in the making become effective the cash register companies would be at once converted into munition plants to make whatever part of a shell or a gun or a rifle they were best equipped to make. In preparation for such an eventuality it has been made possible by Congress to give to the cash register manufacturers annual orders for five or ten thousand dollars' worth of the stuff they would be required to make in time of war. Congress has given the War Department \$250,000 to be expended in such "annual educational orders."

The automobile manufacturers are in the same posture. The making of automobiles is being standardized. There are one hundred makers of motor cars in the United States. It might be necessary to keep only twenty-five factories at work

turning out automobiles. The others on a prearranged plan could be converted at once into plants for the manufacture of supplies and munitions on which they had had conditional and experimental work in time of peace.

A CENSUS OF OUR INDUSTRIAL FACILITIES

No aspect of the whole problem of the work of the Council is more encouraging than the attitude of private manufacturers toward this whole question of preparedness. Even before the National Council of Defense was organized, the Committee on Industrial Preparedness of the Naval Consulting Board conducted a nation-wide inquiry to discover: first, what American industry can actually produce in munitions of war; secondly, to apply that knowledge in a practical way which would put plants in this country into the service of the Government behind the Army and Navy; thirdly, to form an organization of skilled labor that will not be called from its job when war comes and that will not allow skilled laborers to go to the front only to be pulled back later from tasks which they should never have begun. In England at one time since this war began, two great volunteer organizations were at work, one seeking to induce men to enlist in the army, the other combing out of the new armies men who never should have enlisted because they were so badly needed in the industries. The Council of National Defense will avoid that situation, at any rate. The net result of the industrial preparedness inquiry now lies in steel files in the offices of the Council of National Defense in the form of more than 27,000 comprehensive statements relating to the business and organization of as many industrial plants. The questionnaire was drafted by experts and divided into questions relating to business administration, full details of plant, manufacture and production, labor, transportation, inventory of manufacturing and producing equipment and, most important of all, concerning possible future arrangements these questions were asked:

Would you consider bidding upon regular U. S. Army and Navy contracts in time of peace?

Would you consider accepting U. S. Army and

Navy business in time of war on cost plus reasonable profit basis?

Would you consider accepting "Minimum annual educational order" under this clause?

Minimum order for annual production of Army and Navy goods will be accepted with the understanding that such order will be restricted to that product for which the manufacturer's equipment is best fitted; also, that such order shall be for only such a quantity of product as will insure familiarity with the work upon the part of the manufacturer's organization. The manufacturer agrees that this minimum annual educational order shall be put through the factory in regular course and in such manner that foremen and those holding positions of responsibility shall become familiar with the peculiarities incident to the manufacture of these goods. In event of war the manufacturer will be expected to concentrate upon this same product and it is essential, therefore, that his entire organization, including purchasing, manufacturing, inspection, shipping, engineering, cost keeping, and administrative departments be made familiar with the work. Minimum orders will not be of sufficient quantities to interfere with manufacturer's regular production.

Would you consider accepting payment according to this clause?—

It is proposed that payments for "minimum annual orders" shall be made upon the basis of the actual cost of production, inclusive of all special tools, jigs, etc., plus a reasonable profit. In case special jigs, tools, gauges, or fittings are necessary for the production of these goods, a minimum supply shall be kept on hand, and if they can be made in the plant, the engineering or designing department shall maintain at all times corrected drawings from which the shop may, upon short notice, construct the necessary equipment for quantity production.

Would you favor the enrolling of skilled labor according to this clause?—

In war as now waged the industrial force has become quite as important as the fighting army. Skilled mechanics in all lines of production work must be kept from enlistment in the Army and must be retained in the factories, mills, and mines for the production of munitions. It is essential, therefore, that the names of these skilled workmen be listed and that the men themselves be enrolled in the Industrial Reserve. It is proposed that a button or other distinguishing mark will be supplied by the Government in the event of war to skilled workmen enrolled in the Industrial Reserve and such enrolment will be considered to carry with it honors equal to enrolment in the fighting army. It is also proposed that a Government card will be issued to each man enlisted.

II. PLANT

- 1 (a) Location of plant. City or Town State
 (Street and number—Bound by streets to determine location on city map)
 (b) number of buildings. (c) are buildings owned or rented.
 2 Plant surroundings. (Isolated position, congested district, etc.)
 3 Population of city. 4 City map attached? 5 Blue-prints attached (a) ground plan
 with building locations? (b) floor plans?
 6 Total ground area. 7 Ground area unoccupied available for expansion.
 Square feet Square feet
 8 Building construction 9 Number of stories 10 Insurance rate.
 (Concrete, brick, wood, etc.)
 11 Floor space. 12 Approx. carrying capacity of floors per sq. ft.
 Square feet Pounds
 13 (a) Can stories be added? (b) how many. 14 Company offices in plant or separate
 15 Description of fire protection
 16 Sprinkler system.
 Kind
 17 (a) Heat—developed in plant? purchased?
 (b) Light—developed in plant. purchased
 Kind
 (c) Water supply. (Private or outside sources)
 Kind
 18 (a) Power developed in plant purchased
 Kind
 (b) power now operating. (c) maximum capacity.
 Horsepower Horsepower
 19 Can plant be operated at night?
 20 Elevators—(a) number of freight (b) capacity of largest
 (c) platform of largest, length width
 Feet Feet
 21 (a) Are facilities ample for feeding employees? (b) if large addition made to force?
 22 (a) Are facilities ample for housing employees? (b) if large addition made to force?
 23 Wash rooms? 24 Lockers for employees?
 25 (a) Postal or Western Union office in plant? (b) number of telegraph operators.
 (c) how many are not American citizens
 26 (a) Telephone switchboard in plant? (b) number of telephone operators
 (c) how many are not American citizens
 (d) number of departmental extensions (e) number of trunk lines to outside
 27 Auto call or other signalling system in plant? 28 Pneumatic tubes between departments?

A PAGE FROM THE QUESTIONNAIRE

re than 27,000 industrial concerns have answered these and other questions, and the information thus secured has been filed confidentially in the offices of the Council of National Defense

All the information received in response to this nation-wide inquiry is now being tabulated and analyzed. Only a few of the manufacturers have doubted the ability of their plants to aid the Government in war time, and even these have changed their views when shown how little doubt there is that on the outbreak of the war virtually all concerns not engaged in lines of work essential to the national needs would be stripped of their labor, either for the Army or for maintaining other industrial plants vital for the supply of such need. In the event of hostilities probably 80 per cent. of the industries of America would of necessity be mobilized and concentrated on producing the many elements of twentieth century warfare. The war abroad has taught manufacturers here the astonishing adaptability of almost any industry when properly inventoried and organized. A dye factory, for example, may be transformed within a week or ten days into a plant for the production of high explosives. How well this lesson has been learned in the United States is shown in the tenders of service received by the Council of National Defense.

ALL THE INDUSTRIES FALL IN LINE

A large capacity sash chain maker believed he could with little difficulty produce cartridge clips for rifles and machine guns, and a manufacturer of threshing machinery was sure he could make six hundred six-inch shells a day.

A maker of underwear declared he could turn out bandages and other knit goods for the Army and Navy and Red Cross services. A button maker thought his machines could be used for small munitions work, and a company manufacturing drugs stated that it could turn a considerable portion of its product into an adjunct for making cordite for shells.

One well-known foundry said it was well equipped to turn out tools and machinery for small arms and ammunition. A maker of belting suggested that he could produce webbing with which to fasten equipment on soldiers.

A Buffalo manufacturer wrote: "We

look upon it as a patriotic duty to fill out the blank forwarded to us"; and a maker of pocket-knives volunteered to produce various lines of munitions supplies.

Automobile manufacturers have offered every assistance in their power. Several optical makers have pointed out where they could be of practical aid to armies in the field. An extensive tailoring concern emphasized that the production of uniforms should be standardized. One of the world's leading makers of printing presses placed himself wholly at the command of the Council, and a great municipal transportation system appointed its chief engineer to serve the Council's purpose. A leading American manufacturer of farm materials offered to find out what military utilization could be made of his plants in a day of need.

One concern, with its firm members bearing German names, wrote: "We would be delighted, as American citizens, to do whatever we can do to take part in any industrial preparedness which may be planned." A printing establishment offered the services of its finely equipped map department, and a linotype company stated that it had a large quantity of lathes, drills, milling machines, and other tools adapted for the production of shells, fuses, accurate machine tools, and small metal parts of any kind requiring extreme precision.

These examples might be multiplied many times. Mr. Thomas A. Edison's comment on this piece of work which will form the basis for the programme of industrial preparedness of the Council of National Defense is this:

With this accomplishment comes not merely a better understanding between the business men of America and their Government, but marks almost dramatically the entrance of the trained, non-partisan engineer, doing his job on the sole basis of efficiency, integrity, and Americanism, into the affairs of the Government.

But the greatest service which the committee has rendered to our people and Government has been to drive home the vital, irresistible truth that in war, as now waged, battles are won not alone by fighting men but by the fighting industries of a nation.



THE MAILS OF

CHINA'S AMAZINGLY EFFICIENT
USED TO INSURE PROMPT DELIV

THE MANDARIN

POSTAL SERVICE AND THE METHODS
ERY BETWEEN REMOTE POINTS

***I**N China the National Post Office delivers mail twelve times a day in some of the larger cities, shows a yearly surplus of receipts over expenditures, and in other ways illustrates a capacity for governmental administration that is a hopeful augury for the future of the newest Republic. The following photographs tell the story of its difficulties and achievements.*



TRANSPORTING THE MAILS BY CABLE

China now belongs to the Postal Union and has a most efficient service at very low rates. Though much of the credit for this belongs to foreigners who built up the system, yet without the progressive attitude of the Government and the hard work of the thousands of Chinese employees the service would be a failure.

THE WORLD'S WORK



PRIMITIVE POSTAL VANS IN YUNNAN

Roads in China are deplorably bad and transportation inland is practically done by carriers, mounted or afoot, but whenever possible rude native carts are employed



WINGED MERCURIES OF THE MAILS

More daily deliveries of mail have been instituted in China than is customary in many countries. In some of the cities there are twelve deliveries daily. Special delivery letters are despatched by couriers on bicycles

THE MAILS OF THE MANDARIN



ACROSS RIVERS ON INFLATED HIDES

Although means of communication in the Orient are in an undeveloped state, postal rates are very low and the Post Office imposes perhaps smaller fees for the transmission of mails than does any other country



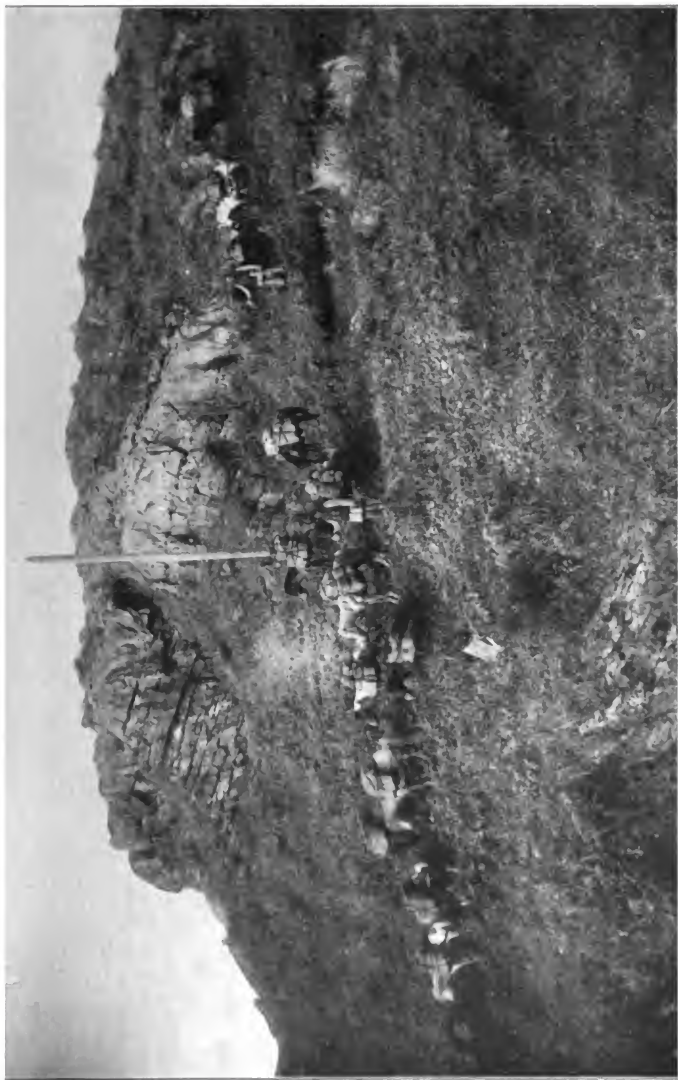
A POSTAL SAMPAN

Notwithstanding the low transmission rates, the Post Office last year paid all its own expenses and showed a surplus of receipts over expenditures



A COURIER PRESENTING HIS PASSPORTS AT A CITY GATE.

The Post Office was able to render indispensable service to the country during the period of revolution by maintaining a sort of semi-neutrality toward all parties.



THE WINDING PACK TRAIN

While the control of the Post Office is centred in Peking there is also a controlling office in the capital of each province. Here are stationed foreigners who have charge of the offices within their jurisdiction



A MOUNTED COURIER

Several thousands of fast couriers are maintained in the interior. The courier leads a dangerous life, braving floods, exposure, pestilence, and highwaymen



A WHEELBARROW MAIL ROUTE.

This slow method is used only in parts of the country where no roads exist, often necessitating that narrow paths between the fields be used

THE WORLD'S WORK



A CAMEL MAIL CARAVAN IN MONGOLIA

In ten years the number of postal establishments in China increased from 1,626 to 8,511 and the money-order transactions from \$1,230,000 to \$27,000,000



A MAIL CART IN TURKESTAN

On the longest courier line in the world. It traverses deserts and crosses mountain ranges for a total distance of 3,643 miles

HOW CAN I SERVE MY COUNTRY?

THE WAY TO OFFER ONE'S SERVICES IN INDUSTRY, IN THE ARMY, AND IN THE NAVY

WHAT can I do in case of war?" That was a common question from February 1st on. Well, what would you do?

Examine yourself. You will probably find that the best thing that you can do is to practise deep breathing and bending exercises until you can touch the floor with the tips of your fingers without bending your knees. See if you can run around the block four times without having an attack of heart failure. Have a competent person look at your feet. The chances are ten to one that you have mistreated them shamefully and would be unable to walk five miles with a forty-pound pack on your back. Do not blame Congress for unpreparedness or the Administration for being "slow to act" if you have a thirty-eight-inch chest and a forty-two-inch waist-line. One way to bring about a condition of national preparedness is to prepare yourself for the simplest elemental duties of a citizen and a soldier. Cigarettes before breakfast, an ingrowing toe-nail, and a consequent inability to run one hundred yards are just as reprehensible as a lack of patriotism. There is not much to choose between a man who can fight for his country and won't and a man who wants to fight for his country and can't because he has not taken care of himself. If this country got into a real war with a first-class Power, a million fighting men would have to be trained, drilled, and disciplined as a first move. It is estimated that it would take a minimum of five or six million other persons to maintain this army in the field, furnish it with supplies and munitions, and take care of it when it is sick and wounded. Plum jam, gun oil, rubber boots, sandpaper, tooth powder, pocket handkerchiefs, and tobacco are just about as essential to the modern soldier in the field as cartridges or powder or high-explosive shells. If the United States should have occasion to put a mil-

lion men in the field there would be enough war work for everybody, women as well as men. And if the United States has occasion to fight its battles with some other country's millions it will have all this "behind-the-line work" to do just the same.

The Council of National Defense has been created by an act of Congress to help tell you what you can do in case of war. It is a nice question whether a master baker is not of more importance to an army than any colonel in it. A skilled mechanic who can perform any of the delicate operations involved in the making of a modern high-power rifle or a big gun is the equivalent of a score of soldiers. Ten months will turn almost any healthy, sound man into a soldier, but three times ten months won't evolve a skilled rifle maker out of a farm hand or dry-goods clerk.

Suppose you are engaged in one of the highly organized industries, a maker of automobiles, of dye-stuffs, of woolen goods, of optical lenses, of metal products. The probabilities are that you would be kept on your job; that if you offer your services to the Government as a fighting man they would be refused. Suppose you are engaged in any branch of the system of communications in this country, telephone or telegraph. The chances are that your whole industry would be taken over at the very outbreak of war and that you would find yourself, if not in Government employ, at least under Government supervision, and in the service of your country precisely to the same degree as the man who went out in khaki with a rifle on his shoulder. Certainly if you were a skilled mechanic, a tool maker, or a man accustomed to the use of machinery, you would not be among the first to be shot by the enemy. Trained and skilled producers are even more indispensable in time of war than in time of peace. The larger the number of men required in the fighting line the heavier the responsibility

that falls upon the producer behind the firing line. Not only must he produce for the civilian population but he must make good the shortage caused by the withdrawal of men from industry to the army. Several million men are employed in this country in connection with transportation on the railroads, steamboats, and trolley lines. The utmost care would be exercised by the Government in disturbing these men or in calling upon them to fight. Transportation is an absolute essential of effective warfare, just as essential as the making of munitions, for the munitions, once made, do not become of value until they are carried to the fighting men.

The experience of the war in Europe has taught, too, the necessity of leaving a sufficient number of men on the land to insure adequate crops. A man who raises wheat or corn or produces meats is also engaged in war work. Professional men (except doctors), unskilled labor, and clerks would all be free to offer their services without much danger of being rejected on the score that they were more useful in their ordinary occupations. Men too old to fight and not engaged in the production of war supplies could find employment in time of war in one capacity or another with the Red Cross. That organization for the relief of the wounded is now expanding and modernizing its organization so as to prepare for eventualities. It is conducting classes in nursing, first-aid classes, and work in all the various branches of its field of activity. If you, man or woman, want to do Red Cross work or prepare yourself to do Red Cross work in time of war, a letter addressed to the American Red Cross at Washington, D. C., will bring you a reply if you state your qualifications and tell what volunteer service you think you can best render.

ASK THE COUNCIL OF NATIONAL DEFENSE

If you want to render any other form of war service, or if you are in doubt about what you should do, the Council of National Defense will tell you. An account of what the National Council is and what it is doing is printed elsewhere in this magazine. At present it is mapping and diagramming the resources of this country,

having in mind both men and material. It is divided into committees covering various aspects of preparation. You have only to write to the chairman of the committee whose subject interests you and offer your services to be told what you should do and what use can be made of you. And remember, if you are the head of a business and the business can be useful, it is better to offer the business with you at its head than yourself alone. Address your inquiry to the Council of National Defense, Advisory Commission, Washington, D. C., and write to one of these men:

Dr. Franklin Martin, Chairman Committee on Medicine, including general sanitation.

Samuel Gompers, Chairman Committee on Labor, including conservation of health and welfare of workers.

Daniel Willard, Chairman of Committee on Transportation and Communication.

Dr. Hollis Godfrey, Chairman of Committee on Science and Research, including engineering and education.

Bernard M. Baruch, Chairman of Committee on Raw Materials, Minerals, and Metals.

Howard E. Coffin, Chairman of Committee on Munitions Manufacturing, including standardization and industrial relations.

Julius Rosenwald, Chairman of Committee on Supplies, including food and clothing.

In war with Germany under present conditions the most immediate needs, of course, are the organization of industry and commerce, including overseas shipping and its protection. This is all work of people behind the lines which enables the men actually fighting to continue. As a matter of fact, in an unorganized way all of us who have been engaged in producing or sending anything to the Allies have been releasing just that much of the Allied man-power to fight. The only difference is that if we were properly organized we could do a great deal more than we are doing.

Any one who can do anything in industry necessary in war or in transportation should write to the proper member of the Advisory Council of National Defense.

So much for the man who can best serve his country by staying on his job. Now for the five or six million who are eligible to become fighting men.

Any one who can help defend our coasts or can sail or fight at sea should apply to the commandant of the nearest naval district. There is a place for almost every one in one of the five classes of the United States Naval Reserve.

FOR EX-OFFICERS AND MEN OF THE NAVY

The first class of the Naval Reserve and the one which is naturally the most desirable includes ex-officers and men of the Navy. Men with this experience who are physically fit should join the Fleet Reserve, in which officers receive two months' pay and men from \$50 to \$100 a year. The members of the Fleet Naval Reserve have active duty in peace times only at their own request. In war times they are under regular naval discipline.

If you are a seafaring man between the ages of eighteen and thirty-five and you want to serve on a fighting ship in time of war, go to the commandant of the nearest naval district and tell him that you are a candidate for Class II, United States Naval Reserve. He will give you a provisional rank or rating, and as you serve your yearly instruction you will get your retaining pay. You will be assigned to a position for war service, and in case of war you not only can but must respond to the call.

The men of Classes I and II are the only men of the Naval Reserve who will be sent to the fighting ships.

MEN IN THE MERCHANT MARINE

If you are an American sailorman on a ship that can be of any auxiliary use in time of war and are not particularly set on getting on a man-of-war, the wise thing to do is to notify the commandant nearest your home port that you want to join the third class of the United States Naval Reserve. It requires no training other than your regular work, but you get a couple of months' pay a year for having your name listed to be ready to do exactly as the Navy says in time of war. If you were the captain of a tanker that the Navy wanted in war time and a member of the Naval Reserve, as soon as you were notified you would take orders from the Navy instead of your company. If the company

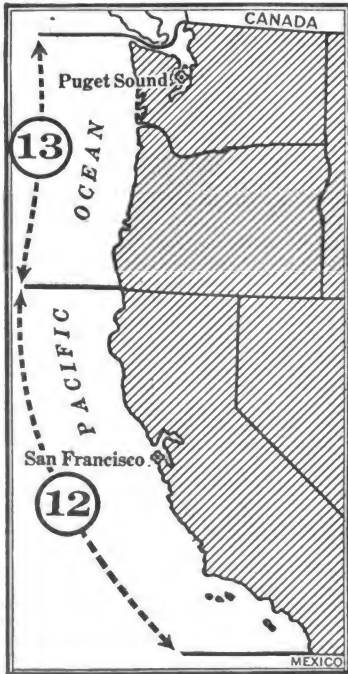
had put the ship in the Naval Reserve before the war the arrangements for compensation would already have been made. Otherwise, you would proceed just the same, only legally you would have captured your own ship and the company could arrange for the compensation later.

If you were a sailor on such a ship you would either serve under the Navy or lose your job. Consequently, the part of wisdom is for all Americans in the merchant marine not bent on active fighting to join the Naval Auxiliary Reserve, gain the retaining pay, and add tremendously to the Navy's ability to change from a peace to a war basis quickly and efficiently. But there is in all classes of the Naval Reserve one thing to remember. Don't join unless you mean to do what you agree to on enrolment. Forty per cent. of the paper strength of the National Guard vanished on the call to the Border. There can be nothing like this in the Naval Reserve. The Navy intends literally to take people at their word. The Naval Reserve is an organization for war purposes and war is a serious business.

THE NAVAL COAST DEFENSE RESERVE

If you are an amateur sailor, or a fisherman, or coastwise sailor, or tugboat hand, or in the lighter service, or suchlike, you probably can be useful to the commandant of your district in coast patrol, and you ought to go see. The commandant has power to enrol in Class IV, the Naval Coast Defense Reserve, anybody and everybody that he will have use for in time of war. Obviously he would want sailors for patrol-boat work, but less obvious and just as necessary are a lot of shore workers. He may need anything, typewriters, watchmen, electricians, marine engineers, marine lawyers, men who can supply patrol ships and repair them. If you want to do something for the Coast Patrol and are in earnest about it, and will write to the commandant telling him your age, experience, and what you think you can do, your letter will be given intelligent consideration, and if you can be useful you will get the opportunity.

But if you are working in a shipyard, do not apply to do other work. Through



THE NAVAL RESERVE DISTRICTS

If you wish to join any one of the five classes of the United States Naval Reserve, call on or communicate with the commandant of the Naval Districts at the cities that appear in bold-face type on the maps. There are three other districts—the Ninth, the Tenth, and the Eleventh, covering the Great Lakes—the commandant for which is located at Great Lakes, Ill.



your own employer you can become a member of the Industrial Class of the Naval Reserve, and as such the Government would rather keep you where you are or move you when it is advisable than to have the beginning of war upset all shipbuilding and repairing by all the shipbuilders rushing off to try to join the active parts of the Navy. That would do much more harm than good.

FLIERS OR AVIATION MECHANICS

If you can build, repair, maintain, or fly an airplane, and you prefer the naval air service to the army air service, you can join the fifth class. The district commandants have this in charge also.

All five classes of the Naval Reserve get pay. Classes I and III get pay on

the basis of their previous experience. The other three classes get paid every year as they do their three weeks' active service. In times of peace they cannot be forced to do active service, although the Navy does not want men who do not intend to do this active service. If it is not done, of course there is no pay. All classes receive full pay of their rank in active service.

If a man wishes to donate his services to the Government he can join the Volunteer Naval Reserve in any of the five classes enumerated, and his status and duties will be just the same as if he were in the regular reserve except that he will get no pay.

During the last two summers there has been a training cruise for civilians given by the Navy, popularly called the Naval Plattsburg. These cruises were training for the Naval Reserve, but men who went on them were not in the service of the Government unless they enrolled in the Naval Reserve.

THE NAVAL MILITIA

There is still another way of rendering oneself eligible for war service in the Navy without going permanently into the regular service. The Naval Militia of the different seaboard and lake states affords a man an opportunity to learn the rudiments of the business. The Naval Militia is subject to some of the same disadvantages as the land militia. Dual control, even under the so called federalization of militia, is not an effective military arrangement. But any man who joins the Naval Militia will be a member of a force which the Navy intends to use in case of need, and therefore he would be sure of being of service.

The Naval Militia has not had such a test as the land troops had on the Border, and they cannot be subjected to quite the same test, for in any active service their numbers are much less in proportion to the Regular Navy than are the land militia forces to the Regular Army. However, the failure of the militia system on land, as exemplified on the Mexican border, is likely to militate against the future of the state naval organizations.

You can find out how to join the naval militia by writing to the Adjutant General of the following states and territories, at the capital of each:

California	Missouri
Connecticut	New Jersey
District of Columbia	New York
Florida	North Carolina
Hawaii	Ohio
Illinois	Oregon
Louisiana	Pennsylvania
Maine	Rhode Island
Maryland	South Carolina
Massachusetts	Texas
Michigan	Washington
Minnesota	Wisconsin

There is one other branch of the Navy which has a use for certain kinds of men. The Office of Naval Intelligence can use a limited number of men of good education who have traveled, are good linguists, and know foreign conditions. If you have these qualifications and have a desire to serve, you should write directly to the Office of Naval Intelligence, Washington, D. C.

If you want to do your part in seeing that the country has an army that would have a fair chance in any fight, the first and most useful thing you can do is to write to your Senator and Representative in Congress, urging him to work and vote for universal service.

THE ARMY RESERVE

The Regular Army, like the Navy, has a Reserve and, like the Navy, it is anxious to get all its ex-officers and men on its rolls.

If you have served in the Army you can enrol in the Reserve for four years. In war you will be called to active service. In peace you may be called for fifteen days' service a year, but this is not obligatory. As a private you will receive \$24 a year and pay for all service performed. As an officer the pay is more, corresponding to rank.

If you have had no Regular Army service but nevertheless wish to join the Reserve as a private, the Army will take you on its rolls—that is, if you are in good health and between the ages of 18 and 45. You will get nothing for being on the rolls.

If you are called for training in peace and respond to the call you will be paid for the time you serve. In war you will be called and, of course, paid. This class of reserve does not amount to much in the infantry, cavalry, artillery, etc., because no training is provided. It amounts merely to a man's signifying in peace time that if a war comes he will volunteer for the length of the war. The Signal Corps of the Army has, however, taken advantage of this provision to enrol a reserve and it is at present training men in aviation—the Secretary of the Interior's son among others. There is an aviation officer at each department headquarters who will take care of any applicants, or a request to the Aviation Section, Signal Corps, U. S. A., War Department, Washington, D. C., will bring all the necessary forms to fill out.

To join the Army Reserve as private in any of the other branches, the applicant should go to the nearest recruiting station or write to the Adjutant General, U. S. A., War Department, Washington, D. C.

An ex-Army officer can join the Reserve in the rank at which he left the Army by writing to the Adjutant General.

Any one else who wishes to join the Army Reserve Corps as an officer must take an examination before a board of officers of the branch of the service in which he wishes to serve. Any man of good character and health and not above the age limit who can pass this examination can become an officer.

The age limit for second lieutenants is 32, for first lieutenants is 36, for captains is 40, and for majors is 45. In Boston, New York, and Philadelphia the Army has detailed an officer to give a course of lectures to fit men for the officers' examination, but these courses are supposed to be only for men who went to Plattsburg or some similar camp. If you live elsewhere and want to become an officer you will have to find some one who can prepare you for the examinations. About the only way to find such a person is to go to the nearest Army post and ask the officer in command if there is not some one whom he can recommend and

also if he does not know other men who want to study for these examinations so that you can form a part of a class.

This is not nearly so hopeless as it sounds, for there are all over the country many of these classes in operation, and there is even at least one mail-order course of instruction.

In aviation only men between 21 and 27 are given training and only men between 21 and 30 are examined for commissions. But men between these ages who can fly are needed.

It will not help those who have already completed their education to know that the Government details officers to various colleges and other educational institutions to give instruction to fit their graduates to be Reserve officers, but all men who can influence boys in institutions that give such military instruction can help toward making a Reserve officer by encouraging students to take these courses.

Aside from the Regular Army Reserve, a man who wishes to serve his country at the front can join the National Guard of the state in which he lives.

No man who is more than twenty-five years old or who has any one dependent on his earnings should join the National Guard unless as an officer. This is because older men are not as good stuff to make soldiers of and because men with dependents cause suffering and economic loss to their community which unburdened younger men do not. Young men who joined the National Guard would certainly have a chance to serve in any immediate crisis, but they would also be in danger of helping perpetuate an inadequate system of national defense.

The whole question of how a man can best serve the United States in war is difficult to answer, because the Government has made no comprehensive plan for the utilization of the country's various kinds of abilities. The plans on which the Council of National Defense is working will serve this purpose if there is a universal service law by the time they are completed. Without that the plans will not be effective.

AMERICA OWNS ITSELF AT LAST

PAYING OFF THE MORTGAGE ON THE UNITED STATES

HOW THE BRITISH GOVERNMENT "COMMANDEERED" AMERICAN SECURITIES HELD BY BRITISH CITIZENS AND HOW MORE THAN \$1,200,000,000 OF AMERICAN RAILROAD AND INDUSTRIAL STOCKS AND BONDS FOUND THEIR WAY HOME—OUR GIGANTIC LOANS TO THE ALLIES—WHAT IT MEANS TO BE A "CREDITOR NATION"

BY

ALBERT W. ATWOOD

American Finance was slowly recovering from the seismic shock of the European War's outbreak. The Stock Exchange had been reopened. Approximately \$5,000,000,000 of a pre-war debt to Great Britain had been paid, and America had emerged from the category of debtor nations. Then came the rush of war orders and the tremendous sale of American goods to the Entente governments.

Then, to pay for these goods, a British and French commission came to this country in September, 1915, with the avowed intention of borrowing \$1,000,000,000.

AMERICAN bankers were astounded at the request. It was not so much that the Englishmen and Frenchmen demanded an unsecured loan as the preposterous size of the suggested credit. With the exception of a very few government loans in times of national crises, the largest loan ever made in this country was for \$162,000,000 on behalf of the subway in New York City, and the raising of this sum extended over a period of several years. It was figured that every "distributing" bond house in America with all their possible customers could not absorb more than \$200,000,000 to \$300,000,000. Sincerely convinced as the leading American bankers were of this fact, they finally agreed to make it half a billion, and not until the last moment did the foreign commission give up its idea of a billion dollars.

Great Britain and France would never have been able to borrow even half a billion if it had not been for the tact, diplomacy, and finesse of the chairman of the commission, Lord Reading. Along with the war's first two Chancellors of the Exchequer, Mr. Lloyd George and Mr. Reginald McKenna, Lord Reading, Chief

Justice of England, formerly the Jewish lawyer, Rufus Isaacs, deserves much of the credit for such success as England has had in her war finance. Although he once said that he really knew nothing about business, and made his reputation as a great prosecuting attorney, yet there is no doubt that his eight years of apparently fruitless youthful experience as a stock broker and his insight into finance, gained from his many famous legal cases, had trained Mr. Isaacs's mind to a point where he could be supremely useful to his country in her hour of financial strain.

But even the proceeds of the great half-billion-dollar loan began to give out by April, 1916. England, France, and Russia have all sent great quantities of gold to this country, and it is still flowing in at this writing in unheard-of amounts. But it would be as disastrous to us as to Europe itself to absorb all their gold. "Small" credits of \$50,000,000 have been obtained from American banks by the Allied countries, but these do not go far. By the summer of 1916 the inevitable and eventual series of secured loans began. In other words, Britain could no longer pay for her imports except either by selling back American securities to us or bor-

rowing from us with such securities as collateral.

Ever since the beginning of the war American stocks and bonds have been coming back in a fairly steady stream, sold directly by their owners. The total has amounted to perhaps \$1,000,000,000. But even this was not enough. The British Government must commandeer, or "mobilize," American securities and feed them back to us as the exigency demanded. Critics of the British Treasury have described this as a system of semi-compulsory or forced loans for which history offers no parallel. But the British public had been gradually led up to it by dark hints and by such announcements of the Treasury as those forbidding new foreign investments and bank loans upon them. In November, 1915, the Treasury officials and Lord Cunliffe, governor of the Bank of England, conferred with the heads of insurance companies and investment trusts.

BRITAIN "MOBILIZES" OUR SECURITIES

The Prudential Assurance Company at once handed over to the Government something like a score of millions of dollars in American securities. The mere physical transfer involved great clerical and other difficulties, but was conducted with remarkable celerity. The trustees of four trust funds created by Andrew Carnegie turned in \$25,000,000 of United States Steel Corporation bonds. Later reports from twenty investment trusts showed that from 30 per cent. to nearly 60 per cent. of their holdings of "Americans" had been turned in, in one case amounting to \$5,000,000.

"We do not consider it a time to haggle about terms," said Mr. Robert Fleming at the meeting of one of these trusts. "Our existence as a great World Power is at stake. We know a great many businesses ministering to the prosecution of the war that have been making huge profits. Unfortunately, we have no interest whatever in the ordinary shares of any shipping, armament, coal, oil, rubber, or other manufacturing concerns which have benefited by the war. Our investments are mainly prior charges, with fixed rates of interest or dividends. We have not been war

profiteers at all. But equality of sacrifice is impossible to adjust, I fear."

But the Government did not trust entirely to the patriotism of the Britishers. Investors were at liberty either to sell or lend their securities to the Treasury. If they sold it was at the prices prevailing in New York, in many cases the highest on record. "Aside from patriotism," said Mr. Fleming, "why should any one here hold American railway 4's at 95 when he can buy first class English 4's around 80? Americans are not down but English debentures are off twenty points." If the investor lent his securities, the Treasury paid him one half of one per cent. a year in addition to the interest. If it should sell them without the owner's consent, as it reserved the right to do, it would pay him 2½ per cent. above the price.

That thousands of Britishers were patriotic enough to respond goes without saying. Early in the war, even before mobilization was hinted at, a Scotsman who had previously sent his securities abroad to escape taxation voluntarily sold them and invested in Government bonds. Even while the New York and London stock exchanges were closed in the summer of 1914, an English peer sold 1,000 shares of Great Northern at a price below its real worth because he felt that he must do his part. One of his sons had been killed and the other wounded in the Battle of the Marne.

THE "MOBILIZATION" IS EXTENDED

At first the Treasury called only for fifty or sixty American railroad bonds. Nor would it take less than \$25,000 at first from any one individual. Then the limit was dropped to \$5,000 and at the present writing they are discussing the advisability of taking less than that amount. The early list of fifty or sixty has stretched out to a thousand or so, including all manner of railroad and industrial stocks. The early "schemes" of mobilization included only securities in the United States, and English financial journals pointedly referred to the omission of Canadian Pacific stock and said that "it is obviously undesirable that control of this great Canadian railway should pass out of British hands."

But the later schemes swept into the relentless maw of the war god the shares of not only every Canadian railroad but those of South American railroads, bonds of the governments of Argentina, Brazil, Canada, Chile, Denmark, Egypt, Holland, Japan, Norway and Sweden, of the Swiss Government Federal Railways, and of the cities of Copenhagen and Stockholm.

In June, 1916, Chancellor McKenna told the House of Commons that it would be necessary to place a super-tax of 10 per cent. a year on the incomes of all persons owning American securities. This would be two shillings on the pound, and he told the House that the steady stream which had been flowing in for many months had now become a mere trickle, not because the supply was exhausted, but because holders required "a spur to remind them of their true duty to their country." He hoped that the Treasury would be able to secure all that it required without going further than this proposal, but if the tax proved inoperative he would have to make it five, ten, or twenty shillings on the pound.

Some very severe remarks were made by critics of the Government upon this application of compulsion to owners of property. The Chancellor turned upon his critics and asked why they were so suddenly to have these extraordinary feelings about their own shares. "Why should they not give up these shares as they had given up the lives of their relatives and were willing to give them up? Why were these shares suddenly to have a marked circle around them with a notice, 'Advance so far and no further?' The Government intends to enlarge the circle as need arises and will stop at no limit."

One member of Parliament, Mr. Urban H. Broughton, had spent twenty-five years in the United States as an officer of companies in which his father-in-law, Henry H. Rogers, had been interested. When the Chancellor finished speaking, Mr. Broughton arose and said that the Chancellor would be well advised to stick to his resolution.

"The resolution affects me more than any other man in England," he said. "All I have is in 'Americans.' I am per-

fectly willing to give them up. It is no hardship at all. I have already transferred more 'Americans' to the Treasury than any other individual in this country. I have lost nothing but have gained in interest and capital." Mrs. Broughton inherited one third of an estate appraised in 1914 at \$40,000,000 and which must have increased since because of its large holdings of Standard Oil. It is reported that Mr. Broughton transferred nearly \$20,000,000 of American securities. Whether Baron Astor, whose holdings of 'Americans' must have been nearly as large, transferred them or preferred to pay the super-tax, has not become known. Three duchesses and numerous countesses who have interests in the fortunes of the Vanderbilt, Goelet, Reid, Mills, Bradley-Martin, and other great American fortunes have also had an unexampled opportunity to demonstrate their patriotism for their chosen land. And as the English papers have grimly remarked, England has taken its revenge for the American invasion of its peagee.

THE RETURN OF AMERICAN SECURITIES

How many securities the British Government has mobilized is unknown to the outside world. The information has been refused even to the House of Commons. "An all-around game of secrecy is being played by the Treasury and its city advisors," is the way one irate English critic puts it. But there are probably excellent reasons for this policy. If American bond dealers knew exactly how many bonds were to be sold by the New York agents of Great Britain, they would slaughter values of even the most gilt-edged investments. President Loree, of the Delaware & Hudson Company, has estimated that in the eighteen months ending July 31, 1916, there were returned to this country \$1,288,773,801 of railroad securities. But there are no figures to show the total returns of industrial and public utility securities, municipal bonds or mortgages, and closely or privately owned mines, breweries, and factories.

A few large corporations have published returns. The United States Steel Corporation, for example, reported, on March

31, 1914, that 1,285,636 of its common shares were held abroad as compared with 537,809 on September 30, 1916.

At times it is known that a single steamship has brought approximately 25 million dollars' worth of American securities from the British Government to J. P. Morgan & Company. It is said that if all the securities held in Great Britain and covered by a single one of the many mobilization lists had been turned into the Treasury something like \$3,000,000,000 of par values would have been added to the Government's available resources. But of course we do not know whether they were all turned in. Rumor has it that the British Treasury had under its control in New York City at one time several hundred million dollars of American investments.

But we do not need any more exact figures to realize the extraordinary skill which has been required to feed out this enormous volume of investments without smashing the market. In no other branch of trade does the knowledge that a large block is overhanging the market have a more depressing effect than in the marts of finance. Shrewd and eager buyers gather like famished wolves and, despite the dignity and urbanity of the banking profession, the buyers will in all seriousness offer prices for the highest grade bonds as ridiculously out of proportion to their real worth as the bid which an old-clothes peddler makes to the careless college student for a suit "as good as new."

THE ACTORS IN THE FINANCIAL DRAMA

The firm of J. P. Morgan & Company is a large organization of highly trained and skilled men. Mr. J. P. Morgan himself lived and worked in London for many years. All the higher officials of the Government know him and trust him. They like him, too, because he is no time-server and has never gone out of his way to seek their favor. No man is further from a pretender than is this direct, blunt, and huge physical specimen of mankind. With an unusual fearlessness he stands up to every storm that blows, and seeks no personal credit for himself for any of his actions as a financier.

Mr. Morgan's standing and acquaintance in London and his contribution of simple but outstanding character, together with the long experience and familiarity with the intricacies of big finance possessed by his partners, Mr. Henry P. Davison and Mr. Thomas W. Lamont, have made his firm the natural channel through which the greatest of all migrations of capital has passed.

Messrs. Morgan and Davison have carried on the negotiations with London, with the active assistance on this side of Messrs. Lamont, Porter, and Morrow, the last-named working out the complex legal problems involved.

A MAN WHO "KNOWS SECURITIES"

But the almost incredible mass of detail and technical work that, necessarily, is connected with the actual sale of the securities has been attended to by a young man, not yet thirty-five, of whom the public has never heard, Mr. Arthur M. Anderson. He had been connected with the firm only a few years as manager of the bond department, a position whose importance in normal times was probably far less than the uninitiated might suppose because the firm was not a distributor of bonds and its main work was banking, rather than investment dealing in the ordinary sense. But the importance of Mr. Anderson's position to-day can hardly be exaggerated.

His secret is the very simple one of study and knowledge. By the sheer power of driving hard work he has mastered every one of the thousands of securities which the British Government might have occasion to sell. He knows the old-fashioned railroad bonds, the very existence of which had been forgotten by most bankers and brokers. He knows who will buy, how much, and when.

Mr. Anderson has spent many weeks in the British Treasury offices going over lists and deciding which securities and how many of them to include in the shipments to America. He told them which they could sell and which they could not. On this side he does the actual selling. He does not give bond houses and the investment managers for rich estates and in-

viduals long lists to paw over. He does not tell them how many bonds he is to sell, what the total amounts are, or even the names of them all.

"Can you use half a million of Northern Pacific 3½'s?" he asks one buyer. Or the buyers say: "We can use divisional bonds to-day. Have you any?" Huge sums have been sold on the Stock Exchange, even larger amounts privately. Private sales as high as \$10,000,000 have been made, although usually the individual sales are smaller. Thirty or forty separate private sales have been made in a day, ranging, in the values of securities involved, from relatively small amounts up to many millions of dollars.

AMERICAN PROPERTIES REPURCHASED

Even to sketch or indicate the variety of her securities which America has purchased is impossible. Although the wealth of this country had almost reached a point here, perhaps, we might at least have begun to shift from a debtor to a creditor nation, yet the war has accomplished in a few brief months what under even the most prosperous of normal conditions would have taken a generation. The long lists of mobilized securities include not only the bonds and stocks of every important railroad and industrial company, but literally hundreds of the old underlying subsidiary lines out of which our great modern systems grew, such as the United New Jersey Railroad and Canal Company, now an integral part of the Pennsylvania. For most people even the names are wholly unfamiliar.

There is the 6 per cent. guaranteed stock of the Tunnel Railroad of St Louis, held by the executors of some old estate in England ever since 1889, undisturbed by panics until the war, the greatest of all upheavals, came along. There is a little local water company in the mountains of California owned by the British ever since the state was settled but now the property of local capitalists. A complete railway, the New Orleans & North-

eastern, has been sold back bodily to Americans. These are but random instances.

England has been jealously husbanding her American collateral, trying hard to keep what she prized the most but gradually letting go these, her priceless financial resources, piece by piece.

For more than two years London has been undergoing a noiseless form of earthquake. The financial organization that existed there at the outbreak of the European War has fallen to pieces bit by bit. London's normal business of banking for the world has been wound up and all the country's capital has gone into its own government securities. We do not know how long this process can continue, but already England and her allies have exchanged the right to a large share of the grain and cotton and beef of America for the promises of their own governments. Europe has given up a large share of the industrial production of the United States and has in its place only the income of its own taxation.

THE NEW CREDITOR NATION

It will be hard, not only for them but for us, to realize that as a result of this wholesale migration of negotiable securities from one country to the other a great stream of interest and dividend payments no longer flows eastward from New York but that a new stream of such payments has started flowing from London westward. For we have not only bought back our own obligations and are taking the place of England and France as bankers for Canada and South America; we are actually lending to English and French cities. It is even probable that the French railroads may have to borrow in this country. If the war lasts long enough we will take over Great Britain's interests not only in her own colonies but in some of her own home industries as well.

These are the events which are making the United States a creditor nation for the first time in the Nation's history.

A TUNNEL FROM ENGLAND TO FRANCE

UNDER THE ENGLISH CHANNEL, THROUGH A SOLID STRATUM OF GRAY CHALK, MADE PRACTICABLE BY MODERN ENGINEERING AND MADE DESIRABLE BY THE USES TO WHICH IT COULD HAVE BEEN PUT IN THE PRESENT WAR—THE LIKELIHOOD THAT IT WILL BE BUILT AS SOON AS PEACE IS DECLARED

BY

GORDON D. KNOX

GREAT BRITAIN has grown friendly to the proposal to construct a tunnel between France and England. This change of feeling has come since the beginning of the war and notably during the last few months, and there seems at last every probability that the British opposition will now be definitely withdrawn.

Imagine what the advantages to Great Britain would have been if the tunnel had been open for use when this war began. From the moment of the declaration of war it would have been practicable to send heavy trains through the tunnel at ten-minute intervals; in other words, the Government could have sent more than 100 trains in every twenty hours, leaving four hours in the day for the up-keeping of the tunnel. By means of these trains, 60,000 tons of material a day could have been transmitted in either direction—which is a good deal more than the actual requirements now. And if this facility in provisioning British troops were to shorten the war by only two days, the saving in actual money would pay the whole cost of construction.

As an engineering feat the tunnel presents several points of interest. When complete it will be the longest tunnel in the world, the present proposal being that it should be thirty-three miles long from end to end. The essential of the scheme that has been prepared by M. Sartiaux, the engineer of the Nord Company, and that has been agreed to by engineers in both France and England, is that the tunnel should all the time keep within the im-

pervious stratum of the Lower Gray Chalk, a stratum that is 187 feet thick at Dover and 180 feet thick at Sangatte. Two independent circular tunnels are to be bored side by side, and these are to be connected at frequent intervals by galleries to promote the ventilation of the tunnel. For the purposes of drainage and to make feasible the removal of the vast masses of material with which the engineers will have to deal, two galleries will be driven to the centre of the tunnel from the French and English sides, sloping down from the centre of the tunnel to the shore ends, where powerful pumps will be installed to deal with any water that may percolate through into the tunnel. All along the length of the tunnel secondary galleries will be driven, connecting the tunnel with this main gallery. During construction the material excavated will be removed downhill, to be lifted up at the shore end, far from the site of the work, and when the tunnel has been constructed it will be drained permanently by the force of gravity and by the work of pumps at the shore ends.

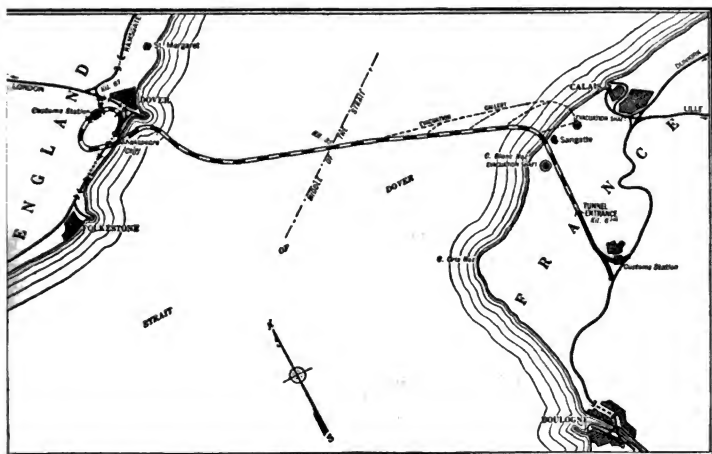
In 1876 and 1877, the French geologists, Messrs. Potier and Lapparent, using a machine designed by Sir John Hawkshaw, took 7,600 samples of the bottom of the Channel, 3,267 of which they were able to use. They found to their satisfaction that it was possible to follow the strata that dip gently to the north the whole way across the Channel, and that the line of outcrop was very nearly parallel with a line joining Folkestone to Sangatte.

One of these strata or layers is known as the Lower Gray Chalk, or the *Craie*

rise or *Craie de Rouen*, and wherever has been studied it has been found to be free from fissures and slides. It is reasonably soft material, somewhat similar to Portland cement, and has the valuable property of "puddling" itself so as to become absolutely impervious to water. It is in this stratum that is between 180 and 200 feet thick that the engineers have decided the tunnels should be constructed. In a lecture delivered before the congress of the Franco-British Travel Union in

(c)—That the presence of any such fissure can be foretold with certainty, and without risk to the men employed, by providing a pilot drill to be attached to the boring machine, an advanced trial hole being thus always kept in front of the excavation.

(d)—That, should such a fissure be encountered, due precautions can be taken according to well-tried engineering methods, which, in the opinion of the French and British engineers, would ensure the



THE LONGEST TUNNEL IN THE WORLD

The present proposal for a tunnel under the Strait of Dover provides that it shall be thirty-three miles long from end to end. The daily freight-transporting capacity of such a tunnel would equal that of from twenty to thirty cargo steamers of the type that cross the English Channel.

London in September, 1913, Sir Francis Fox defined the fundamental points on which he and the French engineers were in agreement as follows:

FOLLOWING THE CHALK LINE

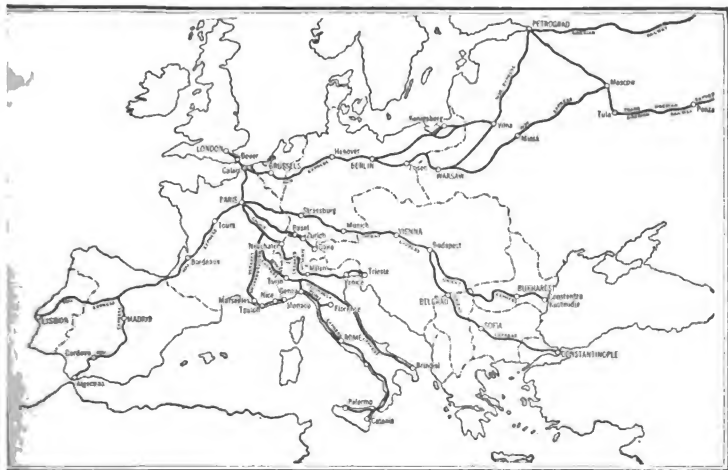
(a)—That the proposed tunnels can be constructed throughout in the Lower or Gray Chalk, a stratum very homogeneous, practically free from and remarkably impervious to water.

(b)—That the occurrence in the Gray Chalk under the Channel of water-bearing fissures is improbable, but not impossible.

work being carried past the fault, any water arising from such fault being duly excluded.

(e)—That a drainage heading should be driven from each side of the Channel, rising toward the centre, and connected at Dover and Sangatte with shafts for pumping and winding.

(f)—That the main tunnels should consist of two single-track circular tunnels, each of 18 feet net internal diameter, and thus large enough to accommodate the rolling-stock of the British and French main lines, except only their locomotives, for which would be substituted electrical



CONNECTING ENGLAND WITH THE CONTINENT

The chart shows how a channel under the Strait of Dover would bring England much nearer, by railroad connection, to the great cities of continental Europe

Many difficulties threaten the tunnel engineer, but there is no reason to anticipate any serious danger in the Channel Tunnel enterprise. A temperature higher than about forty degrees is not anticipated, and ventilation will be an easy matter, for in the first place it will be possible by means of fans to keep a steady current of air flowing in through one of the tunnels and out through the other by the most recently excavated traverse, and secondly the galleries by which water and material are to be removed will provide another approach through which air can be pumped. This general system of ventilation has been found adequate to keep all the galleries and traverses in a perfectly fresh condition, while there would be no serious difficulty in supplementing the supply at the actual working face by means of secondary ventilation.

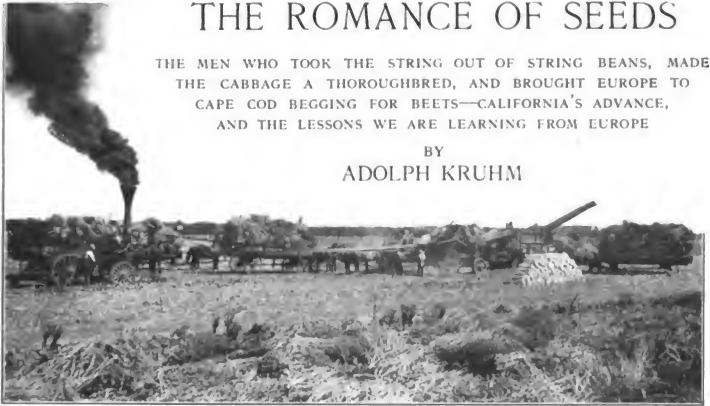
The most original idea worked out in the construction will be the driving of a drainage gallery. This will start from either end of the tunnel, at about 400 feet below the sea level, and will rise gradually to meet the centre of the tunnel, which at that point will be about 350 feet below sea

level. It will serve many objects. When the tunnel is completed its main function will be to drain off any water that may percolate in, but during construction it will not only serve this purpose but will be used to help in the removal of the excavated material, will enable the tunnel to be planned out with the utmost certainty, and allow it to be built with the least delay and the most facility. All the time that the gallery is being driven, borings will be made to explore the strata, and thus by making any slight modifications that may be required in the alignment it will be an easy matter to keep the tunnel well within the limits of the Gray Chalk stratum. Further, though in most tunnels there can be only two working faces, the method will allow of as many working faces as are desired; for the work of excavation will be able to proceed from each of the cross-galleries that are driven to the line of the main tunnel. The amount of material to be excavated is enormous, calculated at 140,000,000 cubic feet, or one thirtieth part of the excavation required for the construction of the Panama Canal. To deal with it, a double-track

THE ROMANCE OF SEEDS

THE MEN WHO TOOK THE STRING OUT OF STRING BEANS, MADE
THE CABBAGE A THOROUGHbred, AND BROUGHT EUROPE TO
CAPE COD BEGGING FOR BEETS—CALIFORNIA'S ADVANCE,
AND THE LESSONS WE ARE LEARNING FROM EUROPE

BY
ADOLPH KRUHM



THIS country to-day holds a position without parallel in the seed history of the world. The agricultural and horticultural development of the United States has proved conclusively that, between the Dakotas and tropical Florida and between the coast of Maine and the Golden Gate, nearly every vegetable, fruit, and flower from anywhere can be nursed to maturity and will bear seeds. How this fundamental truth affects us, as a nation, what has been done to capitalize these natural resources, and the future

which it opens up to us is one of the most fascinating chapters in American history.

The development of the business of seed-growing into an industry of recognized importance occurred almost simultaneously in this country and in Europe. Prior to the beginning of the nineteenth century, the distribution of seeds was conducted largely on a basis of barter. In those days, the market gardeners were the real seed men of the world and their surplus, disposed of by "swapping," or across the market bench, supplied the world with vegetables. But the country quickly out-



"PEDIGREED" PLANTS

A field of "pedigreed" cauliflower plants going to seed. The stakes carry the numbered papers of truly registered stock



AN OHIO ONION FIELD IN SEED

The five-foot-deep humus beds of the Buckeye State produce surpassing quality crops each year

grew this method. It soon dawned upon men engaged in the business on both continents that the business of growing seeds was one quite distinct and apart from that of selling seeds. The working out of this problem in this country gave birth to the modern American seed house, which has been a greater force, perhaps, than any other in making America the world's seed garden which it is to-day.

From the start, America assumed the leadership in the production of high-class seed specialties, particularly among vegetables. It is significant, however, that this lead of early history was the result of

favorable climatic and soil conditions rather than of unusual efforts on the part of the growers. The soils of Massachusetts grew squashes which far surpassed in size and quality any grown on the other side. Connecticut onions commanded a premium of 30 per cent. over those grown elsewhere. Melons and tomatoes did better in New Jersey than they ever could in the Old World.

As in nearly every other line of human endeavor, the business of seed-growing in this country at first followed the line of least resistance. Wherever soil and climate proved favorable and a certain

THE ROMANCE OF SEEDS



TONS OF RADISH SEEDS

Growing on a California ranch. As yet, American-grown radish seeds do not come up to European standards

amount of intelligent labor was available, there sprang into existence gardens, acres, plains or whole sections devoted to seed-growing. In due time we became independent of Europe in such vegetables as found a most congenial home here. Soon after the Civil War, European beans, lettuce, onions, peas, and tomatoes were of past history here. The most momentous step toward leadership in seed production was taken, however, in 1875, when California was "discovered" to be especially fitted to produce quantities of popular vegetable and flower seeds of such a quality as only a Californian climate can produce.

From the standpoint of the seed-grower, California is a veritable Garden of Eden. For untold centuries, the elements have washed down from its mountain sides the soil that now fills the valleys with unmeasured fertility. For six months of the year, Nature accommodates the grower with cloudless skies. Rain at seed-harvest time is a rare occurrence in California; hence the seeds grown there are bright, plump, full of vigor and vitality. To carrots, lettuce, onions, and radishes, Californian soils and climate present ideal chances for perfect development such as probably no other part of the world can



"ROGUEING" CALIFORNIA SWEET PEAS

"Rogueing" is the term used to describe the process by which groups of men remove the flowers that are "off" shape or color

claim. As a result, crops of 600 tons of carrot seed, 500 tons of lettuce seed, 600 tons of onion seed, and 400 or 500 tons of radish seed are an annual occurrence in the Golden State—almost inconceivable quantities from the standpoint of the home gardener who is accustomed to handle these seeds in "packets" containing a fraction of an ounce.

The most romantic part of California's seed industry is the rise of the sweet pea to the first place among the world's most popular annuals, and California has put it there. More than 125 distinct varieties

are now grown every year, one grower alone devoting nearly 200 acres to them. At present, the growing of high-class sweet pea seeds in California eclipses anything ever attempted in the history of the seed business. Two thousand acres yield more than 1½ million pounds of seeds every year, several hundred tons of which were exported to Europe prior to the war.

Nor are American activities in seeds confined to sections already mentioned. Along the mountain ranges of Idaho and Montana thousands of acres bloom into miles of garden peas grown for seeds only.

THE ROMANCE OF SEEDS



DRYING ONION SEEDS

On a ranch in California. So secure is this climate from sudden showers that seeds remain stacked outdoors for days

An estimate by one of America's foremost specialists in growing this crop places the total annual yield at $1\frac{1}{2}$ million bushels. And he adds the significant phrase: "I believe that when this announcement is made there will be many, even among seeds men, who will consider this a romance, pure and simple." Yet, he is convinced that his figures are conservative, both as to the 75,000 acres devoted to peas and the yield mentioned.

Can you imagine what quantity one million pounds of cucumber seeds represent? There are enough seeds in that

quantity to give each man, woman, and child in this country a modest patch of pickles. Yet, this is only Colorado's contribution to this country's cucumber seed supply, with Nebraska, Kansas, and New Jersey providing an equal amount.

Have we, then, achieved the desirable independence and security in seed supplies for which our unrivaled natural resources should stand? Are we prepared to maintain our present lead unaided when thousands of trained European seed growers will leave the trenches to return to the peaceful pursuits for which train-



A TENT COLONY OF BEETS

Pedigreed French sugar beets housed in tents. For work of this kind France dedicated a monument to the House of Vilmorin

ing has equipped them? It is well that, at this time, we should look our situation squarely in the face, analyze true conditions, and act accordingly, so that we may enjoy our inheritance to the fullest extent in years to come.

At the outbreak of the European War, about 50 per cent. of all vegetable seeds and 90 per cent. of all flower seeds (other than sweet peas) used in this country came from Europe. For this, America paid Europe the tidy sum of several million dollars annually. Why? While Nature has endowed us with practically

perfect soil and climatic conditions to a marvelous extent; while we are producing seeds in staggering quantities, we have been all too willing to disregard the human element which enters so largely into the production of that evasive element known as quality in seeds. The quality in seeds which is visible to the eye—bright appearance and plumpness—has nothing to do with the inherent qualities of the same seeds. These will not become visible until the crops grown from the seeds mature, and then it is too late to remedy losses due to inherent defects of the seeds.

THE ROMANCE OF SEEDS



EUROPE'S FOREMOST SEED GARDEN

At Verrières, near Paris, where scientific research, in coöperation with Nature, strives for maximum results in the plant world

It is particular attention to this detail which makes European seed growers our successful rivals in the world's seed market. Despite our lavish natural advantages, we are far from being beyond competition for years to come. Before we may become entirely independent of European seed gardens without sacrificing the inherent qualities of the different races of vegetables and flowers, we must become more proficient in the practice of patience and thoroughness, to which should be linked a distinct devotion to idealism.

Just how the application of these enters into the production of seeds with inbred

qualities may best be illustrated by a few incidents of a trip through the seed gardens of the Old World that I made just before the outbreak of the present war. I visited the monument dedicated to the House of Vilmorin by the Republic of France because of its achievements and leadership in pedigreed seed production. While walking through the wonderful trial gardens at Verrières, near Paris, I asked the guide to point out to me an example of the type of work which caused the country to show its appreciation in such magnificent form. In response, he conducted me to a village, unlike any other I had ever seen.

THE WORLD'S WORK



A TYPICAL CALIFORNIA SEED RANCH

The crops are planted every year in checkerboard fashion to reduce dangers of mix-ups at harvest time

It was a village of tents, each about seven feet high and a yard in diameter. Within these tents grew the priceless mother-plants perpetuating the race of high-bred French sugar beets. A man was in charge of the tent colony whose sole duty consisted of watching these plants and nursing their seed crop. An approaching storm would find him busy covering his charges with the folding tents, sunny weather would cause him to expose them

to heat, light, and air. But always the welfare of these plants would be of paramount importance to him. Why?

A year prior to this, experts in type selection had walked many miles up and down the rows of acre after acre of fields planted to beets of this variety for seed production. From a ten-acre field, containing approximately 250,000 roots, they selected about 2,500 as coming up to their conception of an ideal specimen, consider-

ing size, color, and shape of the root. These elect 2,500 roots were then carried to a laboratory containing the latest and best devices known to mankind to ascertain physical values and sugar contents. A sample of the pulp of each root was subjected to the most searching tests to find the exact percentage of sugar it contained. Only those roots containing the highest percentage of sugar, plus the most pronounced characteristics holding promise of special value to the race, would be chosen for the work of perpetuating the strain.

Perhaps only 10 per cent. of the total would pass the ideal mark set for the examination. Often, this stands for less than one tenth of one per cent. of the roots grown in the field from which the experts made their selection. No wonder a special guardian was appointed to watch the plants grown from these critically selected roots the following year.

Every shell bursting over the trenches in Europe to me has shrieked "skill" and every advance has spelled "patience." Patience and skill are needed in America today, quite as much as resources. Patience and skill we must acquire before our resources can be turned from a liability into an asset. American seed growers must persistently keep ideals before them and strive for their attainment. For some time to come, the mercenary spirit must give way to the vision of a quality which will add further laurels to American enterprise and initiative. This is the ideal which has helped the master seed growers of Europe to the highest place in the esteem of the seed-using world, and has enabled them to maintain their position against the most strenuous competition.

Fortunately, this country can boast of a select body of master seed growers who practise European ideals in seed selection and production with a devotion as commendable as it is profitable. Out on Long Island lives a man who has devoted his life to studies of the humble cabbage family. He knows all the members of the family by name—and they run into scores. He nurses them from babies to full-grown plants and nurses the plants the second year until they bear the desired crop of seeds. That man knows cabbages, and

the world pays tribute to him by offering 50 per cent. more for every pound of seed he grows than for other seeds of the same kinds obtainable elsewhere.

Up in Massachusetts, a seed grower specializes in the production of thoroughbred strains of beets and carrots. For years this grower has taken special pride to grow only such roots for seeds as would measure up to his ideals. For years, a critical body of market gardeners in the most exacting section of this country—New England—has insisted on this grower's strains, no other proving acceptable. In due time, such fame spread to the ears of eager Europe. We now behold the unusual spectacle of some of the master seed growers of Europe securing their seed stocks of table beets from a Massachusetts grower and paying him the retail price of one dollar a pound for every pound of seeds he is willing to furnish.

Up in central New York, a veritable human dynamo, sixty years young, is evolving for America finer races of peas and beans than the world has ever known. Future generations will come to know Mr. C. N. Keeney as the man who took the string out of the string bean. All his life he has worked over beans. Almost thirty years ago he evolved the first bush beans that were really fit to be eaten: Stringless Green Podded. Since then, almost a score of new varieties have been evolved by him, some green, some yellow, some flat, some round, some early, some late, but *all* without strings.

The war has, to a certain extent, shut off many seed supplies, especially flower seeds. An unprecedented famine of the choicer kinds stares us in the face. To make the best of this war-made opportunity, American growers are putting forth tremendous efforts. Yet, in them, they are singularly handicapped because of the limitations of available skill. And because to us, as an agricultural and horticultural nation, those tiny things called seeds are of paramount importance, it well behooves the leaders of our nation to display interest and aid in the carrying on of constructive work which will help America to that position in the world of seed production to which its natural resources entitle it.

THE PATH TO AGRICULTURAL PREPAREDNESS

SINCE the beginning of this century [that is, in the last sixteen years] fifteen countries have either adopted or greatly extended a land settlement policy which aims to give settlers homes at the least possible cost and also to finance the settler who is a good moral risk, so as to enable any one, who is frugal, industrious, and ambitious, to own a home. These countries are Great Britain, Denmark, Norway, Sweden, Germany, Russia, Austria, Italy, the six Australian states, New Zealand, British and German South Africa, Brazil, Venezuela, and Uruguay."

The United States is not among the nations listed in the foregoing paragraph. That omission is of grave significance in this period of high costs of food, unrest of farmers in the West, congestion of immigrant farmers in industrial centres in the East, increase of tenantry on the land the country over, and world shortage of food production.

This quotation is taken from the readable, informing, and constructive "Report of the Commission on Land Colonization and Rural Credits of the State of California." It is the fruit of a year's investigations, in which the Commission was aided in the taking of testimony and the analysis of facts by the Commonwealth Club of California and by the University of California. The report is a detailed picture of the business and social sides of rural life, an analysis of the causes of its failure, and a statement of the remedy. It points out that the Federal Farm Loan Act does not fully meet the situation because its benefits are "restricted to farmers who can give first mortgage security on land worth double the amount of the loan," and adds that "in order to enable tenant farmers to become farm owners, or in order to give adequate assistance to colonists of small capital, a separate credit system based in some measure on the character of the borrower must be provided."

The Commission found that the commonest cause of failure of settlers was inadequate capital: "We have not found a single settler who, bringing with him only the limited capital accepted by state systems in other countries, has been able to pay for his land in the time agreed upon in his contract." The Commission cites two examples that could be paralleled by the thousands all over the country:

"One [settler] with a capital of \$1,575 paid \$1,500 of it as a first payment on a farm costing \$7,500. He had \$75 left with which to build a house, buy a team and farm equipment, and pay living expenses until a crop could be grown." "Another landed in one of the settlements with a wife, four small children, and \$1,100. The day he arrived he turned over \$1,000 of his \$1,100 as a one-fifth payment on forty acres of land. At night he had \$100 in cash and a debt of \$4,000. He faced a large expenditure for house, team, tools, preparation of the soil for cultivation, all of which must be made before he could earn a living from the land."

What is the remedy? The Commission finds it to be in the adaptation of a system of State-aided or State-guided purchase, the essential elements of which are to be found in all the systems worked out by foreign countries. ["State aid" does not mean that the system costs the Government and the general taxpayer any money. In Australia, the system, though involving more than 100 million dollars, has paid the Government a large cash profit]:

"Small initial payments. The first of these essentials is a provision for enabling farmers to enter into possession of land with only a nominal payment, thus leaving the greater part of their capital available to pay for improvements and equipment.

"Organized construction of farm improvements. The second is the creation

of an organization, either state or private, to make the necessary improvements, such as houses, stables, etc., leveling and ditching irrigated land, and providing practical superintendence over the farming operations of beginners to prevent costly delays and mistakes.

"Long-time payments for land and improvements. The third is making the period of payments long enough to enable the money to be earned out of the soil, and having the payments amortized, that is, in small amounts paid annually or semiannually rather than in a lump sum; also securing for the settler, usually through the use of the State's credit, loans of money needed for improvements at low rates of interest.

"Practical advice and supervision for beginners. The fourth is the employment of capable business men fully informed regarding prices of farm equipment and farming operations in the locality to give advice to inexperienced beginners or farmers from other sections of the country who do not know what crops to plant or when or how they should be cultivated."

What are the results of the application of these principles?

"Ireland. In Ireland 9,000,000 acres of land have been purchased by the British Government since 1903. After the purchase, this land was subdivided into small farms on which the necessary houses and other improvements were erected. These ready-made farms were then sold, mainly to former tenants, at an average price of about \$50 an acre, the buyer to have sixty-eight years in which to pay for the farm and the improvements, with $3\frac{1}{2}$ per cent. interest on deferred payments. For many years Ireland was one of the most distressed countries in the world. Within a decade the wretched and more or less lawbreaking farm peasant has been converted into an industrious, progressive, and law-abiding landed proprietor.

"Russia. In no other country has systematic state colonization reached the magnitude it has attained in recent years in Russia. Between 1906 and 1910 the Peasants' Land Bank, which has an annual Government subsidy of \$2,575,000, bought, subdivided, and sold to settlers

4,041,789 acres for \$92,700,000, or about \$23 an acre. The maximum size of these farms is fifty-seven acres. Loans are made up to 90 per cent. of the value of the land, with interest at 4 per cent. and a payment period varying from thirteen to fifty-five years. This is in addition to the immense colonization operations of the Government in Siberia where, as stated in Herrick's [Mr. Myron T. Herrick, former American Ambassador to France] work on rural credits, 'hundreds upon hundreds of thousands of Russian farmers have acquired millions of acres, worth billions of dollars, by means of money and credit facilities supplied by the Government.' It is reported that Russia is now making preparations to inaugurate, at the close of the present war, the most liberal and comprehensive system of State aid in land settlement yet undertaken by any country."

At this point, if not before, the reader may be expected to object that "American farmers are different; they are too independent and too individualistic to be profited that way." But the fact is that one of the most extensive and most successful of these systems is in operation in Australia, which is more nearly like the United States in government and people than any other country save Canada.

"Australia. Between 1901 and 1914 the six Australian states purchased and subdivided 3,056,957 acres, for which \$55,243,125 were paid, or about \$18 an acre. In all these states provisions were made to assist settlers to build homes and effect improvements needed to bring the land fully and promptly under cultivation. In the five-year period from 1909 to 1914 these six states lent the farmers, to make improvements and buy equipment, \$68,029,500. *This has been done without any cost to the general taxpayer, as the interest paid by the farmers was greater than the interest paid by the State; and the farmers have met both payments of principal and interest, so that there has been an accumulated profit of \$1,233,370.*"

The whole of the California Commission's report is fascinating reading. Some of it concerns only California, because

conditions there are extreme; but most of it applies equally to New England, the South, and the Mississippi Valley. And it contains much suggestive comment on the broad subject of land in its relation to the public welfare—besides containing much practical information for any man who is thinking of buying his first farm or of selling his old farm to buy a new one.

It throws a bright light on some causes of the high cost of living, on the political disquiet of the farming states, and on the state of agricultural preparedness for war in this country. The war in Europe has now got to a point where it is largely a question of the side that has the biggest bread basket. We should confront the same situation in any prolonged war.

WHAT ABOUT YOUR EYES?

THE HEALTH OF THE EYES MAY BE THE CAUSE OR THE RESULT OF GENERAL ILL HEALTH—THE DIFFERENCE BETWEEN AN OCULIST, AN OPTICIAN, AND AN OPTOMETRIST—FACTS ABOUT GLASSES, ILLUMINATION, ETC.

BY

CHARLES PHELPS CUSHING

TO MAKE sure that this series of articles shall be authoritative, the *WORLD'S WORK* has arranged to have them reviewed and approved by the Life Extension Institute before they are published.

The Life Extension Institute was organized by well-known scientists, publicists, and business men as a semi-philanthropic enterprise to disseminate the knowledge of healthful living among the people. Ex-President Taft is president of the Board of Directors, and its professional advisers include some of America's most distinguished physicians and surgeons, as well as the more prominent educators. The Institute's approval of these articles, therefore, assures their scientific character.

EVERY competent oculist is a collector of cross-sections of the daily lives of his patients. This is not out of idle curiosity. The oculist is a physician (an M. D.), and it is as much his business to prescribe for errors in his patients' ways of living as for errors of ocular focus. "Defective vision may be a sign of ill health. Defective vision may be a cause of ill health." Keep this in mind if it ever occurs to you that the medical man to whom you apply for a prescription for your overstrained eyes appears to be examining you too closely upon personal matters that seem far removed from wall charts and lenses. The state of your digestion and your temper, what you do with your evenings, what you eat and drink and smoke, how often you go to the "movies," the kind of light you have over your desk—any or all of these points (and others) may

furnish important information to the man who is prescribing for your eyes.

Stand by for a few moments and have a look at the sort of thing that happens in oculists' offices every day. Case: a young business man with overstrained eyes. Questions and answers in the course of the consultation show that the applicant's daily schedule runs somewhat as follows:

A hasty breakfast of coffee and rolls. Street car to the office, reading a newspaper on the way. At his desk from 9 until 12:30, working hard and fast. Luncheon of roast beef, coffee, and apple pie, followed by a cigar. Back to the office shortly after 1, and hard at work again till 5 or 5:30. Home on a street car, reading another paper. Dinner at 6 or a little later, opened with a cocktail for an appetizer; *pièce de résistance* usually a steak. Mashed potatoes. White bread. As the steak is large and filling (and costly)

he rarely orders any vegetable side dishes. Likes a little beer or wine with his dinner, but is "a temperate man" and rarely takes more than a glass or two. For dessert, pie or French pastry or ice cream, followed with demitasse and another cigar. Often does a little work in the evening. Otherwise goes to a "show"—"movies" preferred. Occasionally a card party. Usually smokes little at the office but makes up for lost time in the evening. Before going to bed takes a laxative, for of late he has a growing tendency toward constipation. Turns in at about 11:30. Often has difficulty in getting to sleep right away; little noises disturb him greatly, and he lies awake thinking about affairs at the office. Wonders sometimes if he hasn't been smoking too much and if he oughtn't to cut out his after-dinner coffee. Always finds it an effort to get up in the morning. Confesses to a tendency toward "nerves" and quick temper, probably due, he hazards, to the pressure of work and "office politics." Hasn't a moment to spare from his work; in fact, he put off this appointment with the oculist until the last possible moment.

Glasses are required. The oculist orders them. But that is only part of the prescription; he then goes on to explain that the patient's vision will be further improved—perhaps greatly improved—by making certain changes in diet, cutting down on stimulants and tobacco, giving the eyes more rest (particularly in the evenings), and perhaps taking some setting-up exercises every morning and a leisurely walk just before bed-time.

DIET AND EYE-STRAIN

"All this," the doctor explains, "is because in such a case as yours the general health and the health of the eyes are likely to exist in close association. In a highly-strung physical organization the eyes may, in a reflex way, affect the digestive tract, cause 'nerves' and sleeplessness. In the same reflex way constipation or indigestion or sleeplessness or 'nerves' may affect the eyesight. If you were a husky long-shoreman, getting lots of exercise and rarely putting your eyes to any strain, a defect in vision might cause you no annoyance.

That same amount of defect in the vision of a sensitive sedentary type might produce a nervous breakdown. You are the sort who have to be careful.

"You may wonder why I should advise a man who is not ill and who came here to be treated for 'nothing but eye-strain' to revise his diet. I say it would be better for you to limit yourself to not more than one order of meat a day, to substitute graham bread for white, baked potatoes for mashed, to eat more fruit and vegetables, less pastries, and drink less coffee. What has white bread to do with your eyes?

"Just this—it is one of a number of dietary causes of your tendency toward constipation. Adopt the right diet and you can dispense with laxatives. Your eyes will be early beneficiaries from the new régime. You know for yourself how quickly gastro-intestinal conditions affect them, for when you have 'bilious attacks' they ache and are heavy and spots float before them. Auto-intoxication from derangement of the stomach and the bowels sometimes affects the eyes very seriously.

THE EFFECTS OF STIMULANTS

"Possibly you think I am quibbling over a small point again when I advise you, 'a temperate man,' to drink less stimulants. That is because you probably do not realize that the eyes, like the heart, have to pay in the costs of overstimulation. To a certain degree you are troubled with 'nerves' and sleeplessness, and your digestion is not always of the best. The stimulants you are drinking aggravate such conditions, and the eyes suffer along with the rest of your body. Moreover, in some persons such poisons have a more direct effect upon the eyes. A single large dose of whiskey has been known to produce temporary blindness. In the same fashion excessive drinking of tea or coffee has been found directly responsible for impairments of vision—reductions of one twentieth to one fifth.

"Now, as you know, one man's meat is another's poison. Stimulants may have very little apparent effect upon your particular pair of eyes—or they may have great effect. So with tobacco. These

narcotics impair some men's eyesight. They sometimes even produce blindness. The fact that you are 'temperate' in your drinking and smoking is no guarantee that narcotics are doing your eyes no direct harm."

Point by point the oculist went on to show how the things that make for right living affect the health of the eyes. He was doing what hundreds of other oculists do every day. The case for which he was prescribing is here described at length because it is a common one.

WHAT AN OCULIST IS

When the incident was told to Dr. Eugene L. Fisk, of the Life Extension Institute, his first brief comment was, "Typical!" Then from a cabinet he drew out a bulletin of the Institute upon "The Eyes and Health," and pointed at the opening sentences:

Defective vision may be a sign of ill health. Defective vision may be a *cause* of ill health. When there is trouble with the eyes an oculist should be consulted.

An *oculist* is a physician who makes a specialty of the eye.

An *optician* is one, not a physician, who deals in optical instruments, such as eye-glasses.

An *optometrist* is one, not a physician, trained to examine the eye as an optical instrument and determine its optical defects. An optometrist should be competent to determine such defects.

Neither an optometrist nor an optician is permitted under the law to consider the eye as an organ and diagnose its possible diseased conditions."

GLASSES NOT ALWAYS ESSENTIAL

"This is a primer-like introduction," the doctor remarked, "but popular notions about such matters are so hazy that we feel it our duty to make every point absolutely clear. Why should you consult an oculist when something goes wrong with your eyes? Because he can tell you *all* that is wrong—the total meaning of the defect. The optometrist, who is not a physician, can examine the eye only for its efficiency as an instrument.

"The business man you have been describing may have been rather surprised to find that the prescription the oculist

gave him included something besides a pair of spectacles. But glasses are sometimes the least important part of the oculist's order—sometimes, in fact, are not required at all. I have known cases where the right glass was all that was needed and the wearers so improved in health that they gained ten pounds in one month. In other cases the fault affecting the eye had its seat elsewhere—at the roots of a tooth, in the kidneys, in habits of diet, in the ventilation of a paint shop, in a hair dye, in a disease acquired while sowing wild oats. The oculist often renders valuable service by detecting in an applicant the first signs of Bright's disease or arterial trouble. Such service is quite out of the province of the optometrist.

"Go to an oculist—and don't wait until the last minute to do so. Though our eyesight is precious to us beyond appraisal, something in human nature makes us put off our eyes until the last. This trait, I may as well be frank to say, is not unknown even among physicians. Few general practitioners have a sight-testing chart in their offices; and when they are conducting an investigation for physical 'leaks,' they are likely to put off the eyes until the last and perhaps forget them altogether. Of course, if the patient complains of a certain sort of headache, the doctor will immediately think of the possibility of eye-strain. In such an instance or in one where the patient himself suspects the existence of eye-strain, the doctor will see that an optical examination is made. But often even the simplest kinds of tests are omitted—tests that any doctor could conduct with a chart on the wall of his office.

THE FUNCTION OF GLASSES

"This is unfortunate, for defects of the eye are common, and proper glasses to correct them make not only for the individual's comfort but also are very likely to improve his general health. Among the applicants examined by the Life Extension Institute more than 30 per cent. have uncorrected errors of vision. Statistics from the public schools show that among our 20,000,000 enrolment 'at least 5,000,000 children suffer from eye diseases or defects

which seriously impair their school progress.

"What makes it particularly important for *every one* to have his eyes examined is the fact that a person's own visual sensations are not always safe guides. Farsightedness, for example, is something about which many people like to boast. Yet it is often a sign not of visual perfection but of an imperfection; and in an office, bent over papers all day, the farsighted man may be suffering from eye-strain and not know what ails him. Certain men who can see better without glasses than with them find it to their profit to wear lenses to relieve an eye-strain. Glasses, you must understand, do more than simply enlarge, like a reading glass, the object which you happen to be looking at. A reading glass may only magnify the defect and do more harm than good.

"Apparently, even such simple facts as these are not generally known. Indeed, a great many men who are well enough informed on other topics do not know the first principles of how to conserve their eyesight. They may be conscious of eye-strain and yet unconsciously go right on doing many things to increase that strain. Things such as these—reading a newspaper on a jiggly street car, working with a light directly behind them or directly in their faces, reading or working in too bright a glare or in a dim or flickering illumination. They do not realize that they might well limit their allowance of moving pictures. They do not know the harm in too brilliant a desk light. They buy worthless patent nostrums for the eye and have a positive dread about adopting glasses. The price they pay for all this often is extremely dear. It ranges from constant physical discomfort to loss of sight."

Several of the points brought up by Dr. Fisk's remarks deserve further discussion. One of the most important of these topics is lighting.

THE LIGHT TO WORK IN

"The best light," observes a bulletin of the Institute, "is an indirect, diffused light, of sufficient strength to make the letters on the page stand out black and clear, and of uniform distinctness. If

you have a desk light, note the intense reflection from the various articles on the desk, especially white or metallic surfaces. This is a constant source of eye-strain. Various papers on the desk will be found to be of varying legibility, some of the writing illegible unless brought directly under the gaze. If a diffused, indirect light is used, either reflected from the ceiling or partly reflected and partly direct through ground-glass surfaces, documents and papers on any part of the desk will be read with equal facility. There are then no dazzling reflections. Exposure to excessively brilliant light will sometimes bring on inflammation of the eyes, or even temporary blindness, as occurs in snow-blindness."

THE HIGH COST OF POOR LIGHTING

To this Dr. Fisk adds that, if he had his way about it, all incandescent light bulbs in offices and factories would be softened by ground-glass or frosted surfaces to protect the eyes from the sharp light of the glowing wires. Indirect systems, where the light is directed upon the ceiling instead of downward, are admirable, he holds, but care should be taken to see that the light is strong enough. This sort of lighting requires more candle-power than a direct system: For further information on this point Dr. Fisk recommends business men to look up a little pamphlet published by the American Medical Association, in Chicago, on "The Relation of Illumination to Visual Efficiency." It is one of an exceedingly valuable and interesting series on "Conservation of Vision." Some of these pamphlets are concerned with such practical topics as Schoolchildren's Eyes, Care of the Eyes, Accidents, Wearing Glasses, Eye-strain, and discussions of the effects upon the eye from whiskey, tobacco, wood alcohol, and various drugs (The pamphlets cost only five cents, postpaid). All are written by medical authorities.

Some of the hints in the paper on illumination are so important that a passage or two deserves quotation. Here is what the author, Dr. Ellice M. Alger, has to say about the cost of bad lighting:

"Even when estimated by its actual cost

in dollars and cents, bad lighting is often more expensive than good, but from the standpoint of efficiency there is no comparison. Bad lighting undoubtedly causes unnecessary strain of the eyes and consequent premature muscular fatigue; it compels closer and more constant attention to the details of work, so that tasks which should be done almost automatically and without mental effort are done consciously. Under such circumstances the output of each individual is manifestly less than it should be, there is a larger percentage of mistakes and material spoiled, and the number of accidents, large and small, is vastly increased. Even under the best of conditions, the extreme subdivision of factory work, with its consequent monotony, largely destroys the pleasure of work, but bad eyes and poor lighting and long hours are important factors in industrial discontent of the day."

ADVANTAGES OF A NORTH LIGHT

Concerning daylight illumination, Dr. Alger remarks that a good north light, diffused, is the best, causes a minimum of shadow, is subject to no rapid changes in intensity, and in the matter of color values is the universal standard. "It is least trying to the eyes," he continues, "and allows a maximum sharpness with a minimum of fatigue. The best lighted room would be one lighted on the principle of a photograph gallery. Where land is cheap and a one-story building is possible, this principle can be applied in the so-called saw-tooth type of construction now used in so many factories, the entire roof consisting of rows of skylights facing toward the north. In buildings of more than one story the use of north light alone is impracticable, since all the rooms cannot face toward the north, or other buildings may interfere with the light, while, unless the room itself be small or high-posted, the light would not reach far enough into the room. This particular difficulty can be largely overcome by the use of prism glass in the windows, which throws a light much farther back into the room. Windows should be as large as possible and on only two adjoining sides of the room. This permits the arrangement of desks and work

so that each person may get his light over his left shoulder, which is the accepted position of greatest efficiency. No one should be compelled to sit steadily facing a window or light of any kind. A north light is practically never bright enough to require reduction, but when the windows face in other directions the intensity of the light will vary widely with the position of the sun, and arrangements must be made for diffusing and modifying the direct sunlight during some portion of the day by the use of frosted glass or the interposition of thin shades of cloth, which diffuse and soften the light."

Dr. Alger contends that electric lighting is "still in its infancy." Like Dr. Fisk he has a good word to say for indirect lighting and a warning against naked incandescent bulbs—an illumination particularly tiring to the eye. "Globes which show the outline of the lamp filament," he holds, "are only partly effective." Here is his suggestion about lighting an office: "It would be perfectly possible to have an individual light on each desk so controlled by an opaque reflector that it lighted the desk properly and was at the same time prevented from shining into any one's eyes. The same effect is secured, for all practical purposes, by having lights scattered over the ceiling or suspended from it, each enclosed in a diffusing globe of some pattern. The amount of light on each desk should rarely be greater than three candle-power, nor less than two. As a rule, wall brackets are not advisable, unless they can be placed high up. The so-called 'indirect system' aims to secure the same diffusion of light by having the units so disposed that the entire light falls first on the ceilings and walls and is thence reflected into the room. In this way, if the surfaces are rough, the light is completely diffused, while its color is modified as desired by tinting the wall surfaces. Indirect lighting is a pleasant way of lighting a large room where a comparatively low illumination is called for. In a school room, where plenty of light is needed, it is comparatively expensive, since only a small part of the emitted light reaches the desks, the rest being expended in lighting the upper part of the room or absorbed by the reflecting surfaces. Their

color is an important detail, since even light-colored surfaces seldom reflect more than half the light, while with dark ones the amount may fall to 10 or 15 per cent."

Another valuable pamphlet of the Conservation of Vision series is by Dr. Walter B. Lancaster on "Wearing Glasses." One of the first points the author makes is that eye-strain may exist in cases where the sight is actually better than normal, and that such persons need glasses quite as much as those who wear them to "see better."

VANITY'S "OBJECTIONS" TO GLASSES

Dr. Lancaster does most worthy service in disposing of one of the popular objections to wearing glasses, namely, that wearing glasses makes one look old. This was true, he admits, in the days when they were worn only to help poor sight, and chiefly by the elderly. "We have changed all that. Now, a very large percentage of wearers of spectacles are children, and the wearing of spectacles is no longer a mark of advanced age. It is not a sufficient excuse for a lady to say that glasses would make her look old. Moreover, wearing glasses is one of the best preservers of a youthful appearance. This is because prolonged eye-strain causes wrinkles to appear prematurely and gives the countenance a strained, anxious, tired, drawn, cross look, which is very characteristic and is far more to be avoided, from the point of view of appearance, than the slight disfigurement of glasses. Indeed, so far from being unbecoming, there are some types of face to which glasses just add the finishing touch!" After indicating some of the mistakes in the way glasses are worn and adjusted, he gives some hints about buying them, getting used to them, and taking care of them. Dr. Lancaster's paper is all written in non-technical language, and straight to the practical point.

Another objection often made against glasses is treated in a paper on "Accidents"

by Dr. E. C. Ellett. The danger that spectacle glass will injure the eye is comparatively small, he holds, and he even advocates wearing glasses as a protection when you go shooting. "We frequently," he says, "see people who wear glasses meet with accidents in which the glasses are broken, but seldom is the eye itself hurt by the fragments. Indeed, if the glasses are provided with rims they are a protection rather than otherwise."

In another pamphlet of the series Dr. Harold Gifford hammers hard on this same point, talking from an extended experience: "The question of the value of protective glasses is one which deserves to be impressed upon all classes of people. Many people meet the recommendation that protective glasses should be worn with the counter objection that they are themselves a source of danger, on account of the possibility of their being broken and cutting the eye. This is, of course, a possibility and such accidents occasionally occur, but the insignificance of this danger in proportion to the safety they confer can easily be demonstrated. In thirty years' experience, during which the writer has seen in the neighborhood of 2,000 serious accidental injuries to the eye, he has seen only three injuries of any kind caused by broken spectacles. In none of these was the eyesight very seriously injured, while the vast majority of other injuries to the eye would have been entirely prevented by wearing glasses. . . . Every day in this country some dozens, or more probably hundreds, of children lose the sight of one or both eyes through injuries, of which 99 per cent. would have been prevented if the victims had been wearing glasses; and mothers whose hearts are grieved by the counsel of the oculist that their children ought to wear glasses for some defect of vision or refraction may well take comfort from the thought that their little ones are much less likely to suffer accidental loss of sight than other, apparently less favored, ones."

THE FACTS OF THE NORTHERN SECURITIES CASE

THE REASONS WHICH INSPIRED THE FORMATION OF THE FAMOUS HOLDING COMPANY
AND THE STORY OF ITS DISSOLUTION

BY

JOSEPH GILPIN PYLE

[This article, like those published earlier, is compiled from "The Life of James J. Hill," the authorized biography which is shortly to be published in two volumes in its complete form as an elaborate and connected narrative of the life of the great Empire Builder.]

JUST before Christmas, 1901, Mr. Hill returned from New York, to find himself bitterly attacked in his own state in the discussion of the formation of the Northern Securities Company. For the only time in his life, so far as is known, he prepared and signed a statement for publication dealing with his own acts and purposes. It covers the ground of all the transactions briefly. The copy is taken from the *St. Paul Globe* of December 22, 1901. The fact that Mr. Hill owned at that time all the stock of this newspaper is a guarantee that it appeared exactly as he wrote it:

"I have been absent from Minnesota for more than two months, and during that time there has arisen a wide discussion throughout the state of what has been generally called a consolidation or a merger of the Northern Pacific and Great Northern railways, and in this discussion statements have been made which are so widely different from the facts that I feel called upon to make a conservative statement of just what has been done in the past and what will be done in the future.

"When the Northern Pacific failed and the banking house of J. P. Morgan & Company reorganized it, myself and friends were holders of a large amount of that company's securities. After the reorganization was completed we bought about twenty-six millions of Northern Pacific stock, both common and preferred. Some of this stock was afterward sold by individuals, but a large amount has been held from that time to the present.

"About a year ago the Union Pacific Company bought the Huntington and other interests in the Northern Pacific and at the same time made an effort to buy the control of the Chicago, Burlington & Quincy.

"With these lines in the hands of the Union Pacific interests, both the Northern Pacific and Great Northern would be largely shut out of the states of Nebraska, Kansas, Missouri, South Dakota, Iowa, Illinois, and Wisconsin, except by using other lines of railway, some of which were in the market for sale and might at any time pass under the control of or be combined with the Union Pacific interests. We then, with the Northern Pacific, made proposals to the directors of the Burlington to buy their entire property. When this transaction was about being closed the people who represented the Union Pacific Company, and who had previously tried to buy the Burlington, asked to be allowed to share with us in the purchase of that Company; this proposal we refused for the reason that it would defeat our object in buying the Burlington, and, further, it was against the law of several of the states in which the largest mileage of the Burlington was located.

"At that time, against the opposition of the more southerly lines, both the Northern Pacific and Great Northern had put into effect a low colonization rate and were carrying daily thousands of people into the Northwest; many of whom were coming from Kansas and Nebraska along the lines of the Union Pacific. This move-

ment was at its height in the month of April, and after we had closed the purchase of the Burlington, the Union Pacific people undertook the boldest effort that ever was made in this country and bought over sixty millions of the stock of the Northern Pacific in the markets of Europe and the United States. I was in New York at the time, and after Messrs. Morgan & Company were aware of the action of the Union Pacific people it was found that together we held about twenty-six millions of Northern Pacific common stock; and, inasmuch as the common stock, by right of a contract made with the preferred stockholders when the company was reorganized and the stock issued, had the privilege of paying off the preferred stock at par on the first day of January in any year until 1917, Messrs. Morgan & Company then bought in London and New York about sixteen millions of the common stock of the Northern Pacific; at the same time the Union Pacific interests, having already so large an investment, bid the stock up until there was the largest stock corner ever known; the common stock in three or four days went up to one thousand dollars per share.

"I explained to my friends how, with control of the Northern Pacific, the Union Pacific would control the entire Northwest and the West from Mexico to the Canadian line, except for the Great Northern. So great was the effort to get this control that one of my friends in London, who owned two millions of Northern Pacific common, was offered and refused fourteen million dollars for his stock. The result was that Messrs. Morgan & Company and ourselves owned forty-two out of eighty millions of the Northern Pacific common, with the privilege of paying off the seventy-five millions of Northern Pacific preferred. The Union Pacific people owned thirty-seven millions of the common and about forty-two millions of the preferred, which was a clear majority of all the stock of the Northern Pacific, and claimed the exclusive control of the Northern Pacific Railway and through that ownership a control of one half the Burlington. When it was known that these preferred shares could and would

be paid off before the annual election, mutual negotiations resulted in Mr. Morgan giving them a representative in the Northern Pacific board. At the same time I was elected a member of the Northern Pacific board. When I was advised of my election I notified them that I could not legally act as a director of the Northern Pacific and Great Northern at the same time, and I resigned after the first meeting of the board.

THE NORTHERN SECURITIES COMPANY

"Several of the gentlemen who have long been interested in the Great Northern Railway and its predecessor, the St. Paul, Minneapolis & Manitoba Company, and who have always been among its largest shareholders, but not the holders of a majority of its stock, whose ages are from seventy to eighty-six years, have desired to combine their individual holdings in corporate form and in that way secure permanent protection for their interests and a continuation of the policy and management which had done so much for the development of the Northwest and the enhancement of their own property in the Northwest and elsewhere. Out of this desire has grown the Northern Securities Company.

"It became necessary (in order to prevent the Northern Pacific from passing under the control of the Union Pacific interests and with it the joint control of the Burlington) to pay off the seventy-five millions of Northern Pacific preferred. The enormous amount of cash required for this purpose from a comparatively small number of men*made it necessary for them to act together in a large and permanent manner, through the medium of a corporation, and the Northern Securities Company afforded them the means of accomplishing this object without the necessity of creating a separate company to finance the transaction for the Northern Pacific; while, at the same time, the credit of the Northern Securities Company would be much stronger, as it would also hold a considerable amount of Great Northern and other securities.

"The Northern Securities Company is organized to deal in high-class securities,

to hold the same for the benefit of its shareholders, and to advance the interests of the corporations whose securities it owns. Its powers do not include the operation of railways, banking, mining, nor the buying or selling of securities or properties for others on commission; it is purely an investment company and the object of its creation was simply to enable those who hold its stock to continue their respective interests in association together and to prevent such interests from being scattered by death or otherwise; to provide against such attacks as had been made upon the Northern Pacific by a rival and competing interest, whose main investment was hundreds of miles from the Northwest and whose only object in buying control of the Northern Pacific was to benefit their Southern properties by restraining the growth of the country between Lake Superior and Puget Sound, and by turning away from the Northern lines the enormous Oriental traffic which must follow the placing on the Pacific Ocean of the largest ships in the world. . . .

"No merger or consolidation of the Northern Pacific and Great Northern is contemplated. Each company will be operated separately in the future, as in the past.

"I greatly dislike to discuss my business in the newspapers, but during my absence an attack has been made upon myself and friends which has been persistently supported by both political and rival interests. All I ask is fair play, and let time determine whether the public will be benefited or injured by what we have done and will continue to do."

JAMES J. HILL.

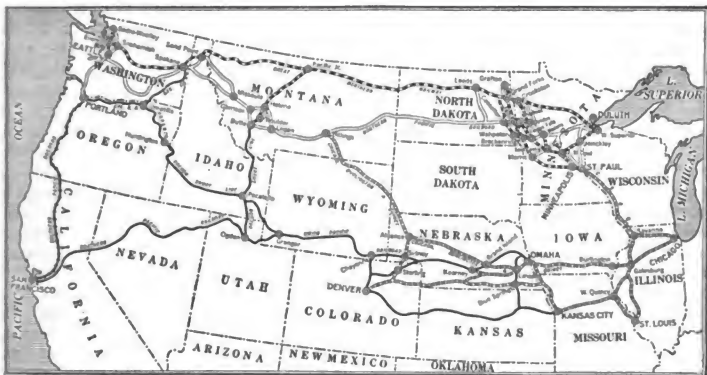
CONCERN FOR THE FUTURE

Confidence in the security of any railroad had received a rude shock. The men whose property had so narrowly escaped what they regarded as destruction were not minded ever again to run a similar risk. They did not wish themselves or their successors to have to make another fight like that of the struggle for control of Northern Pacific. Both sides had had a warning. Each would always have to stand on guard. But who could answer

for the future, when large holdings should be broken up by the changes incident to human life? Some of these men were more than eighty years old. All of them wanted "peace in their time." Mr. Hill had talked of his idea of a holding company to Mr. Morgan and Mr. Kennedy. Mr. Morgan said later that it was a thing of Mr. Hill's planning. Mr. Hill said so himself. His original thought had been to erect such a concern for his own system and its subsidiaries. The consolidation of these which took place in 1907 was already become a necessity. Long before the Northern Securities was formed, this less inclusive proposition had occupied a good deal of his thought. Now circumstances hastened the maturity of the project and compelled an enlargement of its scope. It appeared to all those interested in recent controversies that the only permanent safeguard of the independent existence of these great properties and of a successful, because harmonious, conduct of their business was a sort of tribunal of ownership, where all would have representation and power, where their differences might be arbitrated and their common welfare assured.

Mr. Morgan said that this form of holding company presented itself to him as practical and desirable only after the 9th of May, 1901. "My idea was, I can't live forever, and J. P. Morgan & Company may be dissolved." This fell into step with the anxiety that had been pressing upon Mr. Hill for some years about the future of the Great Northern. So all these more or less nebulous ideas drew together and coalesced in one solid purpose. A future possibility became a present necessity. With these men, to perceive that something ought to be done was to go ahead and do it. The definite plan, as announced to the stockholders, was matured about the 1st of November, 1901. Of course, the exact form that it should take had been, before that, the subject of exhaustive investigation and minute legal scrutiny of advantages and dangers. It was intended as a purely defensive measure.

When it was determined, soon after the agreement of May 31, 1901, that settled the controversy over Northern Pacific, to



RAILROADS INVOLVED IN THE NORTHERN SECURITIES CORPORATION

The object of its organization, according to James J. Hill, was to secure permanent protection for a group of aged stockholders

form such a company, some of the ablest lawyers in the country were set to work on the preliminaries. From the beginning, the essentials of it were agreed upon without serious difference of opinion. The plan, Mr. Hill said, was practically determined by Mr. Kennedy, Mr. George Baker, Mr. James, Mr. Thorne, Mr. Clough, Mr. Perkins, and himself. Mr. Hill has given in his own words the explanation of the general lines followed: "We were particularly anxious to put a majority of that stock where it could not be raided again as it had been. We wanted to put it in a corporation that was not a railroad company—a company that would hold it as an investment, and the larger the company the more difficult it would be to secure a majority of it. Then, again, a reason why we preferred an investment company: railroad charters, I think I may say almost entirely, are drawn or granted on terms that do not permit railroad companies to buy the shares or own the shares of investment companies. Railway companies, under certain conditions, can buy the shares of other railways, as a means of consolidation, or they might buy the shares of a road that they would otherwise build. We were advised that we would be safer with the shares held by an investment company, the stock of which could

only be held by individuals or by corporations that were not railway companies, and to that extent we would be more free from such raids by interests that were anxious to destroy or restrict the growth of this country—such raids as had been made by the Union Pacific interest, so-called."

MORGAN'S CONFIDENCE IN HILL

For the sake of clearness, let it be repeated that the original idea of making a holding company had no reference to the Northern Pacific at all. It was entertained by Mr. Hill before the reorganization of the Northern Pacific. Now, the whole position and all the elements of the problem were changed. In view of the relations established with Northern Pacific and their joint interest in the Burlington, such a holding concern for the Great Northern alone would have been absurd. All the closely allied interests must join. They desired to. In the consultations held, Mr. Perkins represented the Morgan interests. Referring to this, Mr. Morgan not only cleared the air of gossip about internal machinations, but paid to Mr. Hill the highest tribute he could give. "I would have given him all my Great Northern stock. He could have done what he liked with that, because I had confidence

in him and he had confidence in me. It is not a coterie or anything of that kind."

On the 13th of November, 1901, the Northern Securities Company was incorporated. The charter was taken out in New Jersey, whose laws were supposed to be most friendly to this kind of undertaking. It differed from that of most other great corporations formed in this epoch particularly in the fact that its powers were severely limited. The custom was to provide against every contingency by authorizing each of the big, new corporations now being spawned so rapidly to conduct practically any business in which it might conceivably wish to engage. The charter of the Northern Securities confined its activity "to the acquisition of valuable paper held by domestic and foreign corporations, exercising the rights of property over the same, aiding corporations whose paper is thus held, and acquiring and holding the necessary real and personal property." Its authorized capital stock was \$400,000,000. At first a much smaller capitalization was contemplated. But neither Mr. Hill nor Mr. Morgan was willing that any one should ever be able to accuse him of sharing in a profitable venture from which others were excluded. Mr. Hill had a lifelong reputation for working for his stockholders all the time. If there was any conflict of interests, his must suffer rather than theirs. But if only those were admitted whose age and long connection with the company had inspired the project, and if it were a financial success, people would not be lacking to stigmatize it as the plan of a chosen few on the inside to make some money for themselves. He said: "I had the feeling that we would give each shareholder the opportunity to come in at the price we put our own in, if he desired. If he preferred to stay out, that was his privilege." Mr. Morgan took the same position. Adherence to that principle necessitated a capital stock at least as large as that of the Great Northern and the Northern Pacific combined. The authorized share capital of the two was at this time \$280,000,000. Of course, an exchange at above par would raise this limit. Other interests also would want

to be admitted from time to time. About 76 per cent. of Great Northern stock was exchanged for the new security at the rate of \$180 for each \$100 turned in. Mr. Hill had suggested this basis, which was approved by all. About 96 per cent. of Northern Pacific came in on the basis of \$115 for \$100. The Union Pacific people were admitted, for a lasting harmony was desired, and surrendered to the Northern Securities the holdings of Northern Pacific which they had acquired in the fight for possession, receiving in exchange about \$82,500,000 of its stock. The first board of directors consisted of fifteen men. Six represented Northern Pacific interests, four Great Northern, three Union Pacific, and two were what might be called "at large." The presidency was unanimously conferred upon Mr. Hill.

MINNESOTA BRINGS SUIT

On January 7, 1902, the state of Minnesota attacked the company in the Supreme Court of the United States. Denied there permission to file a bill of complaint, it brought suit in the state court. In the meantime the Federal Interstate Commerce Commission had, at a meeting on December 20, 1901, adopted a resolution calling for an investigation by it into "consolidation and combinations of carriers," including "the community of interest" plan; and, on February 19, 1902, the Attorney-General of the United States announced that, complying with a previous request of President Roosevelt, he had given it as his opinion that the "merger," as the Northern Securities was called, violated the provisions of the Sherman Act of 1890. Thereupon, on March 10th, suit was brought in the United States Circuit Court of St. Paul against the Northern Securities, Great Northern, and Northern Pacific.

These two cases resulted in two different decisions by Circuit courts, before the Supreme Court of the United States was reached. The first, which was rendered by a tribunal made up of four Circuit judges, found that "the Securities Company accomplishes the object which Congress has declared illegal perhaps more effectually than other forms of combina-

tion generally known in 1890 when the Anti-Trust Law was passed." It said that, although the motives which inspired the combination might have been "wholly laudable and unselfish," although it was "the initial and the necessary step in the accomplishment of great designs," the only question before the court was whether or not it constituted a combination having power to "suppress competition between two or more competing and parallel lines of railroad engaged in interstate commerce." This question the judges answered in the affirmative. The Northern Securities was enjoined from voting stock, acquiring additional stock, paying dividends, or exercising corporate control. The return of stock held by it to persons holding Northern Securities shares in exchange for shares deposited was permitted. In the state case the United States Circuit Court found that the formation of the Northern Securities did not involve any act or contract in restraint of trade. The real distinction between the two was that while the one court decided that the purchase of a majority of shares in the two companies by a single interest was illegal, the other held that the mere possession of power does not warrant an assumption that such power will be used criminally. This distinction represents the vital point in the case, and really presents the issue on which its determination would finally rest.

THE SUPREME COURT ORDERS DISSOLUTION

Both these cases now went up to the Supreme Court, where they were argued by the best legal ability in the United States. It would be tedious to follow here the conduct of the case, whose importance now is in its relation to the life and work of Mr. Hill. The opinion of the trial court of four justices was sustained by a decision given on March 14, 1904, by the casting vote of a single justice. The Northern Securities Company was ordered to dissolve.

Until the Court's decision was made public, Mr. Hill entertained no doubt that it would be favorable. It was a bitter surprise and disillusionment. That it was adverse struck him no more severely as a

checkmate to one of his plans than as a denial of what were to his mind unchangeable principles. He never believed, at this time or later, that the Sherman Anti-Trust Act was intended to apply to railroad corporations. He never accepted the rule that the power to act unjustly is equivalent to the commission of an unjust act.

This decision, of course, created an immense stir and much excitement in the stock market. It required a readjustment from which came more litigation. Eight days after it was rendered Mr. Hill sent out a circular announcing the approaching dissolution of the Northern Securities Company and the distribution of its assets. This circular noted that since the formation of the company the railroads included had extended and improved their facilities, while the rates paid by the public had been materially reduced. It once more declared that the buying of Northern Pacific and Great Northern shares was done "in the full belief that such purchases were in no wise obnoxious to any law of the United States." Since, however, the Court thought otherwise, the company would proceed to comply fully and promptly with its decree. Therefore, 99 per cent. of its capital stock outstanding was called in and canceled.

THE BASIS OF DISTRIBUTION

Immediately there arose a question precipitating a legal struggle on lines similar to the fight for stock control of the Northern Pacific which followed the Burlington purchase. What should the holders of Northern Securities shares receive in exchange for them? Would they get back exactly the same number of shares in the same corporations that they originally deposited, or only their portion of a ratable distribution of all the assets? Mr. Hill and his friends proposed the latter. For each share of Northern Securities surrendered there was to be delivered to the holder \$39.27 stock of the Northern Pacific and \$30.17 of the Great Northern. To ratify this plan a special stockholders' meeting was held April 21, 1904. At this meeting about 75 per cent. of the stock was voted for the plan. The Harriman

interests had already protested against the proposed scheme of distribution. They had from the beginning been holders of more than \$82,000,000 of the stock. This they had received in exchange for the Northern Pacific shares turned in by them in 1901. As they had attempted, in May of that year, to control the Northern Pacific by purchase, so they now attempted to reach the same end by overthrowing the plan of pro rata distribution, and having returned to them, share for share, the stock of that company that they had originally put in.

HILL ON HARRIMAN

On April 2, 1904, the Harriman interests had taken legal measures to enjoin the carrying out of the plan announced. Let Mr. Hill tell some of the preliminaries, in a letter to a trusted friend, where he can give full vent to his honest indignation: "Before closing let me again refer to their statement that they only wanted protection for the Union Pacific. Mr. Harriman was the first director of the Northern Securities Company to whom I went after the decision of the Supreme Court to consult as to how we should dissolve the company, and he immediately said the only thing we could do was a pro rata distribution. This he repeated on several occasions for four or five days, and at the end of that time came to my rooms to tell me that he was afraid he could not carry it out, and the next day he wrote me a personal letter to the same effect, after he had assured me that we would have their full coöperation, and, in the meantime, having had his own counsel present with the Northern Securities counsel in consultation as to the legal steps to be taken; and his counsel agreed fully and said that it was the only legal and moral course that could be pursued under the circumstances. Within ten days from that time they brought the present suit, giving as the reason: 'We know, of course, that Mr. Hill wanted the control of the Northern Pacific, and it would be a great property in his hands, but we wanted to get control of it if we could and we are going to make the effort, because to make the effort would only cost us the lawsuit.' In which case

the Great Northern would be hemmed in along the northern boundary without any outlet anywhere except on terms to be made for it, and our property would follow the course of the Alton and other roads like it which were lacking in foresight to protect themselves against what might occur in future."

The Circuit Court unanimously denied the application to intervene. Then came more litigation, whose purpose was the same and whose devious course and voluminous record need not be considered here. An injunction against the distribution plan adopted was granted, and through the usual tortuous legal channels this secondary and final question as to the partition of the estate of the Northern Securities reached the Supreme Court.

All the courts, Circuit, Circuit Court of Appeals, and Supreme Court, held for Mr. Hill. The decision of the last mentioned, unanimously rendered March 6, 1905, in which the plan of the Northern Securities Company for distributing the stock held by it was sustained in every important particular, put a quietus on the trouble makers. It was now free to execute its plan for dissolution, and did so. That Mr. Hill, after the pressure of these years of contest in the courts, neither felt an enduring animosity nor permitted rancor to distort his views or change his attitude toward others is shown in a striking way by a personal letter written two months after the court had spoken its last word. Coming from a man of stern temper and thwarted purpose, who had all along believed and still believed himself right in principle, and who had been opposed at every turn, it is a really notable utterance: "I have told all the Union Pacific people that we should let the past be cast aside, and take every proposition between the two or three systems without any prejudice and consider all interests fairly and honestly, and have peace by each company, regarding at all times the rights of all the others. Where there is a disposition to agree on fair terms there should be no difficulty in securing harmony; and this can only be done where there is no right or disposition to encroach upon or invade each other."

MAN AND HIS MACHINES

USEFUL INVENTIONS

A "SAFETY FIRST" STEP LADDER

AN EXTENSIBLE step ladder which cannot tip over is a handy device when there are high windows to be cleaned, top shelves to be dusted, or any other odd jobs to be done where it would be precarious to use the ordinary step ladder.

The ladder, which is of wood, resembles the ordinary step ladder, save that it is extensible, has an extra leg at the side, which is folded back when the



A SAFE STEP LADDER

The support on the side renders the danger of the ladder overturning and other like accidents almost negligible



FOR SAMPLING GRAIN AND SEED

A machine designed to secure reliable samples of grain or seed which can also be used for blending unlike materials

ladder is not in use, and extended outward when in use, thus forming a tripod which cannot easily be overturned, thereby giving a feeling of security to the person mounted upon it.

A GRAIN SAMPLING MACHINE

USING only the power of gravity, a machine has been constructed which permits grain and seed dealers or laboratory workers to secure reliable samples from large portions of the material to be examined. It can also be used for mixing or blending two or more strains of unlike material, and furthermore a sample can be divided so that one half can be used for testing and grading and the other half turned over to the seller or buyer or retained for future reference.

The device is simple, consisting of a hopper held in position over a cone which is provided at its base with a series of ducts with uniform spaces between them. Adjusted to the bottom of the ducts is a funnel with a spout at its bottom part. The ducts con-



A SANITARY REFUSE CAN—

A lightweight and fly-proof refuse can for the kitchen which the cook can easily—

stitute a passageway from the exterior of the cone to the interior of the funnel. Enclosing the inner funnel is an outside funnel, also with a spout at its base. The upper portion of the outside funnel extends over the ducts and the base of the cone. In operation the material to be separated is placed in the hopper and the valve is opened, allowing the material to fall on the peak of the cone in a circular column. The material spreads on the cone at its base and is divided into sections by the ducts and spaces. As the width of the ducts and spaces are equal, the material is divided into equal parts, one of which goes into one receptacle while the other half flows into a second receptacle.

A CONVENIENT REFUSE CAN FOR THE KITCHEN

A LIGHTWEIGHT refuse can, designed especially for use in the kitchen, facilitates the proper and sanitary disposal of garbage in the kitchen by preventing flies from breeding in the refuse and removing unpleasant odors.

The can, which is made of galvanized non-corrosive metal, has been designed for the convenience of the housewife to take the place of the unhealthful and unprepossessing refuse can in ordinary use. The housewife scrapes the leavings from the plates or other waste matter into the can and closes the airtight

cover. When the can is full she carries it out to the garbage can by the bucket-like handle and, while still holding this upper handle, with the other hand she grasps the handle at the back, bringing the upper handle back toward it and, with one finger of the hand holding the upper handle, pulls, like a trigger, the little ring on the top, tilting the can. When the finger releases the cover it drops back into place and there is thus little danger of getting one's hands soiled.

MAKING DUPLICATE KEYS

AN INGENIOUS machine that cuts accurate duplicate keys from original keys, no matter of what make, has recently been perfected.

The key to be duplicated is placed in one vise and the blank key to be cut in a corresponding vise under the cutting disk. The vise carriage is then brought into such position by means of a lateral-feed hand clutch that the shoulders of both the pattern and blank keys just touch the guide disk and cutter respectively. The lateral-feed clutch on the top of the machine is then thrown, and the vertical feed rod released into action and power applied through the combination hand-crank power wheel on the right of the machine, until the cutter has passed over the entire length of the blank. A duplicate of the pattern key is obtained in about one minute. The machine is designed primarily for hardware dealers and locksmiths, but many hotels, schools, office buildings, and stores are using it with success.

AN ADJUSTABLE EYE GUARD

FOR the use of machinists who have to work at turning lathes, grinding wheels, or other machines where there is always danger of pieces of steel



—THAT IS EASILY EMPTIED

—carry outside and empty into the garbage pail without soiling her hands and spilling the contents

or other material flying up into the eye and permanently injuring the eyesight, a handy adjustable eye guard is now available.

The eye guard is much more convenient than having to wear goggles in doing work, as the inconvenience of having to stop and adjust them to relieve the strain that takes place from the pressure is done away with.

The guard consists of a steel frame enclosing a piece of plate glass reinforced with a large mesh iron wire, and it can be adjusted in a few minutes.

A SIMPLE DEVICE FOR MOISTENING THE AIR IN A ROOM

PHYSICIANS are generally agreed that the majority of colds and the prevalence of la grippe in winter is caused by the overheating of houses with a surplus of dry air due to the use of steam heat. With a view to remedying this defect and moistening the air in steam-heated homes there has appeared an inexpensive humidifier which can easily be hung on the back of the radiator itself.

In the past many insanitary subterfuges have been employed to accomplish this end, such as cups of water and wet rags, but this device consists of a stone (of ground stone and charcoal) that is very absorbent and antiseptic. The bottom of the stone is immersed in a pan of water. The pan is filled by means of a funnel which runs to the top of the stone from the pan. A galvanized frame connects the stone, pan, and funnel. Should the air in the room, however, contain too much water, vapor, or dampness it is absorbed into the stone, as the latter will equalize with the atmospheric condition of the room and not let off vapor when the room is oversaturated.



MAKING DUPLICATE KEYS

A machine that will make duplicate keys from any pattern of key has been found very useful in many hotels and stores



SAVING THE EYES

A guard which is adjusted in a few moments and prevents injury to the eye from flying bits of metal

A NIGHT HAND SIGNAL FOR AUTOMOBILISTS

DURING the daytime drivers of automobiles when turning corners or slowing down are accustomed to extend the hand outside the body of the car, giving warning to other machines behind to slow down also. This signal scheme has proved very effective during the day, but at night in the darkness when a hand could not be seen a substitute had to be devised. An automobilist hit upon the scheme of fastening to the back of the driver's hand, by a piece of elastic, similar to a wrist watch, a small red electric light attached to the dashboard and electric batteries by a fine wire long enough to give free movement to the hand. Surrounding the lamp, which weighs but six ounces and is, therefore, light enough to be worn on the driver's hand at all times and ready for instant use, are the words "Safety First," which shine white.

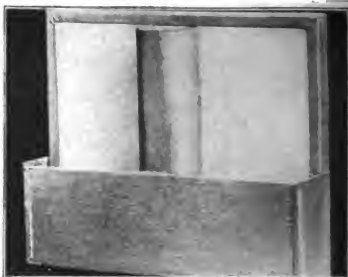
The driver of the car uses his hand almost automatically at night to signal with, from constant use during the daytime, so that danger signal is sure to avoid many accidents which might easily follow were not such a method employed.

COMPUTING THE PAY ROLL

A MACHINE that combines the operations of a pay-roll paying machine, a pay-roll scheduling machine, and an adding and listing machine is em-

ployed by several manufacturing concerns with a great saving of time and labor. Formerly, in making up a pay roll, after the amount to be paid to each employee had been computed it was necessary to figure out how many coins of each denomination had to be obtained from the bank for each envelope—a long and tedious proceeding. Then when the number of coins of each denomination had been figured out it was necessary to put the correct amount in each envelope, and if a mistake were made one had to open and recount the money in each envelope. Furthermore this method left no positive record of the actual amount paid to each employee.

With the use of the pay-roll machine, after the pay-roll sheets have been made out the total amount is added up, but at the same time that the operator



MOISTENING THE AIR

Air from which the moisture has been evaporated by steam heat often leads to colds. This device keeps the air in a room uniformly moist.

is adding the list the mechanism of the machine is computing the change list automatically, and when the sheet has been added the change list is also completed. This record is immediately transferred to a slip and a check written for the total amount shown on the adding machine, and a list printed on the tape of the amounts to be paid to the various employees.

When the money has been received from the bank it is placed in a coin magazine on the machine and ready to be put into the pay envelopes which have been made out and numbered. As the proper amount goes into each envelope it is printed on the tape and added to the total wheel as before. These printed records are a check for the auditor and safeguard the entire transaction. Furthermore, the amount of time and labor saved in a big corporation employing many hands is tremendous.



SAFETY NIGHT SIGNAL

During the daytime chauffeurs warn cars behind to slow down by extending the hand. With this device they can do likewise in the dark.



SAVING TIME AND LABOR IN COMPUTING THE PAY ROLL

An ingenious adaptation of the adding machine which eliminates much of the drudgery of figuring out and adding the pay roll and avoids mistakes.

How to Avoid Pneumonia
November 1916

25 Cents

**THE
WORLD'S
WORK**

**The Authorized Life of
James · J · Hill**

Universal Military Service

By

CHARLES · W · ELIOT

Flying for France

An American Aviator at Verdun

JAMES · M · CONNELL

Victrola

*The chosen instrument
of the world's greatest artists*

The instrument which plays the greatest music is the instrument you want in your home! The Victrola is supreme. Its supremacy is founded on a basis of great things actually accomplished. It is in millions of homes the world over because it takes into these homes all that is best in every branch of music and entertainment.

The artists who make records exclusively for the Victor are the greatest artists in the world. The Victrola tone is the true and faithful tone of the singer's voice and the master's instrument. It is for this reason that the Victrola is the chosen instrument of practically every artist famous in the world of opera, instrumental music, sacred music, band music, dance music, vaudeville and entertainment.

Go today to a Victor dealer's and listen to this instrument for yourself. Hear Caruso or Melba or Elman or Harry Lauder or Sousa's Band on the Victrola.

Victors and Victrolas—\$10 to \$400

Victor Talking Machine Co.

Camden, N. J., U. S. A.

Berliner Gramophone Co., Montreal, Canadian Distributors



CARUSO



FARRAR



SCHUMANN-HEINK



ELMAN



RUFFO

Important warning. Victor Records can be safely and satisfactorily played only with *Victor Needles* or *Tungs-tone Stylus* on Victors or Victrolas. Victor Records cannot be safely played on machines with jeweled or other reproducing points.

To insure Victor quality, always look for the famous trademark, "His Master's Voice." It is on every Victrola and every Victor Record. It is the identifying label on all genuine Victrolas and Victor Records.



New Victor Records demonstrated at all dealers on the 28th of each month



Victrola XVI, \$200

Victrola XVI, electric, \$250

Mahogany or oak

Know Your Own Stomach

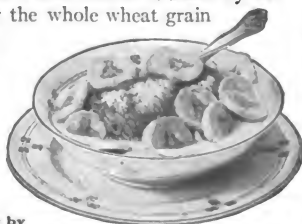


You ought to know more about it than the Doctor. You have lived with it a long time. You know how you have treated it. You know whether it will digest cucumbers or lobsters. You know how vitally it is related to your health, to your happiness, to your earning capacity. There is always safety in

Shredded Wheat

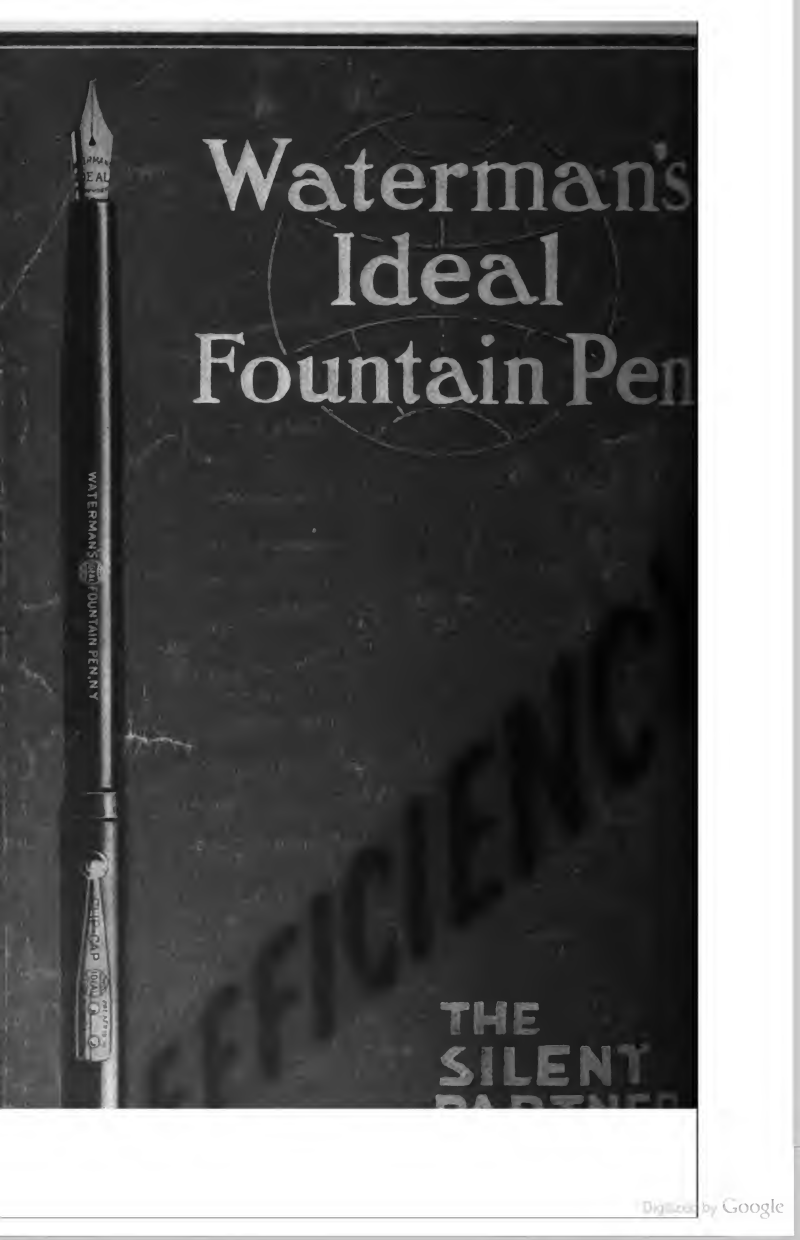
the food that is easily digested when the stomach rejects all other foods. It contains all the body-building nutriment in the whole wheat, including the bran coat, which is so useful in keeping the bowels healthy and active. Shredded Wheat Biscuit is made by the best process ever devised for making the whole wheat grain digestible. It contains more real nutriment than meat or eggs and costs much less.

For breakfast heat one or more biscuits in the oven to restore their crispness; then pour hot milk over them, adding a little cream. Salt or sweeten to suit the taste. Wholesome and delicious for any meal in combination with fresh or preserved fruits.



Made only by

The Shredded Wheat Company, Niagara Falls, N. Y.

A black and white advertisement for a Waterman fountain pen. On the left, a fountain pen is shown vertically, with its nib pointing upwards. The pen has a textured barrel and a clip. Text on the pen includes 'WATERMAN'S IDEAL' near the nib, 'WATERMAN'S IDEAL FOUNTAIN PEN, N.Y.' on the barrel, and 'CLIP-CAP' and 'WATERMAN'S' on the clip. The background is dark with faint, stylized lines. The main title 'Waterman's Ideal Fountain Pen' is in a large, serif font. Below it, the words 'EFFICIENT' and 'THE SILENT PARTNER' are visible in a large, bold, sans-serif font, though partially obscured by the pen and other text.

Waterman's Ideal Fountain Pen

EFFICIENT
THE
SILENT
PARTNER

1 American Ambulancier at Verdun



December 1916

25 Cents

THE WORLD'S WORK





Will there be a Victrola in your home this Christmas?

Think of the delight of having Caruso, Destinn, Farrar, Gluck, Hempel, Homer, McCormack, Melba, Ruffo, Schumann-Heink, Scotti, Tetrassini and a host of other great artists for you!

Think of having Elman, Kreisler, Paderewski, Powell, Zimbalist and other famous instrumentalists play for you; of hearing Sousa's Band, Pryor's Band, Conway's Band, Vessella's Band, Victor Herbert's Orchestra and other celebrated musical organizations; of enjoying the inimitable witticisms of Harry Lauder, Nora Bayes, Raymond Hitchcock, Mizzi Hajos and other leading entertainers.

Who wouldn't be glad to get a Victrola for Christmas! The *only* instrument that brings to you the best music of all the world superbly interpreted by the world's *greatest* artists.

Christmas day and every day, let the Victrola inspire and entertain you! Christmas isn't too far off to see about *your* Victrola today. Any Victor dealer will gladly demonstrate the various styles of the Victor and Victrola and play any music you wish to hear.

Victrola

Victrola XVI, \$200
Victrola XVI,
electric, \$250
Mahogany or oak



Other styles
of the
Victor and Victrola
\$10 to \$400

Important warning.
Victrola Records can be safely
and artistically played only
with Victor Needles & Tone-
tone Stylus on Victor or
Victrola. Victor Records
must be safely played on
tone boxes with powdered or other
reproducing points.

To insure Victor quality,
always look for the famous
trademark, "His Master's
Voice." It is on every Victrola
and every Victor Record. It
is the identifying label on all
genuine Victrolas and Victor
Records.

Breakfast in Five Minutes



Getting a warm, nourishing breakfast on a cold morning for a commuter-husband that must catch a train and a hungry boy that must hustle to school is easy for the woman who knows

Shredded Wheat

the ready-cooked, ready-to-eat, whole wheat food that supplies all the nutriment needed for a half day's work or play. Heat two or more Biscuits in the oven to restore crispness, then pour hot milk over them, adding a little cream and a dash of salt. The perfect food to work on, to study on, to play on. Better than porridges because it encourages mastication, which develops sound teeth and healthy gums. Always the same price, always the same high quality.



Made only by

The Shredded Wheat Company, Niagara Falls, N. Y.



SCIENCE

Every piece of metal, or wood, or leather, or fabric, that is built into the Pierce-Arrow Car has its separate scientific test, according to the use to which it is put.

Every mechanical principle embodying friction, torque, compression, tension, deflection, vibration, elasticity, crystallization, has behind it exhaustive calculations to apply the principle involved or to eliminate the drawback.

The building of a motor car such as the Pierce-Arrow is a problem in mechanics, as much as the construction of a suspension bridge, or a tunnel, or a lighthouse, or an office building.

Every single part in a Pierce-Arrow Car has had the attention of some expert—first, as a unit, and second, in its relation to all other parts.

Each assembled unit, such as engine, transmission and rear axle, is tested for power developed and quietness of operation before being placed in the chassis. The chassis is run on the road at least 100 miles before being passed upon by the final expert tester.

THE PIERCE-ARROW MOTOR CAR COMPANY • BUFFALO N Y

PIERCE- ARROW

James J. Hill's Rules of Business Succeed

January 1917

25 Cents

THE

WORLD'S WORK

· The Next ·
Five Years
of the Navy

by

REAR ADMIRAL
BRADLEY
A. FISKE

Paying off the Mortgage
on the
United States



The Victor Record catalog is the most complete catalog of music in all the world

It has required 19 years of constant research, of steady application, of tireless effort, and the expenditure of more than Eleven Million Dollars to place this catalog in your hands

This great book of 506 pages is the recognized authoritative index to the world's best music; to the greatest musical achievements of all time. Its pages are living tributes to the years of unceasing vigil spent in gathering the best music from every portion of the globe. They reflect the hours upon hours which the greatest artists have devoted to recording their superb art for the delight of all generations. They attest to the enormous amount of time and millions of dollars spent in developing the art of recording to its present state of perfection. And through each and every page runs the story and proof of Victor Supremacy.

Every music-lover will want a copy of this great Victor catalog of music

Everybody should have this book, whether or not they have a Victrola. All will appreciate it because of the information about artists, operas and composers, and the numerous portraits and illustrations it contains.

Any Victor dealer will gladly give you a copy of this great catalog of music, or we will mail you a copy free, postage paid.

Victor Talking Machine Co.
Camden, N. J., U. S. A.

Berliner Gramophone Co., Montreal, Canadian Distributors





THE WORKERS OF THE WORLD



For the woman at the switchboard, for man or woman in all employments that call for sustained mental alertness and physical endurance, for all work that pulls tensely on tired nerves

Shredded Wheat

is the ideal food because it supplies the greatest amount of nutriment with the least tax on the digestion. For breakfast eat it with hot milk or cream. For luncheon eat it with baked apple, sliced bananas or other fruits. It is ready-cooked and ready-to-eat. A deliciously nourishing meal for a few cents.

Made only by

The Shredded Wheat Company, Niagara Falls, N. Y.



Copyright, 1916
By Postum Cereal Co.

Hill on Harriman

February 1917

25 Cents

THE WORLD'S WORK



In a Dugout on Douaumont



This intensely human picture stands for all that is best in music

It is a picture with a message—a living message of absolute fidelity.

"His Master's Voice" is inseparably associated with the highest attainments in the musical art; with the exquisite renditions of the world's greatest artists; with the world's best music in the home.

It is the exclusive trademark of the Victor Company. It identifies every genuine Victrola and Victor Record.

There are Victor dealers everywhere, and they will gladly demonstrate the different styles of the Victor and Victrola—\$10 to \$400—and play any music you wish to hear.

Victor Talking Machine Co., Camden, N. J., U. S. A.
 Berliner Gramophone Co., Montreal, Canadian Distributors

Important warning. Victor Records can be safely and satisfactorily played only with *Victor Needles or Tungs-tone Stylus* on Victors or Victrolas. Victor Records cannot be safely played on machines with jeweled or other reproducing points.

New Victor Records demonstrated at all dealers on the 28th of each month

Victrola





THE WORKERS OF THE WORLD



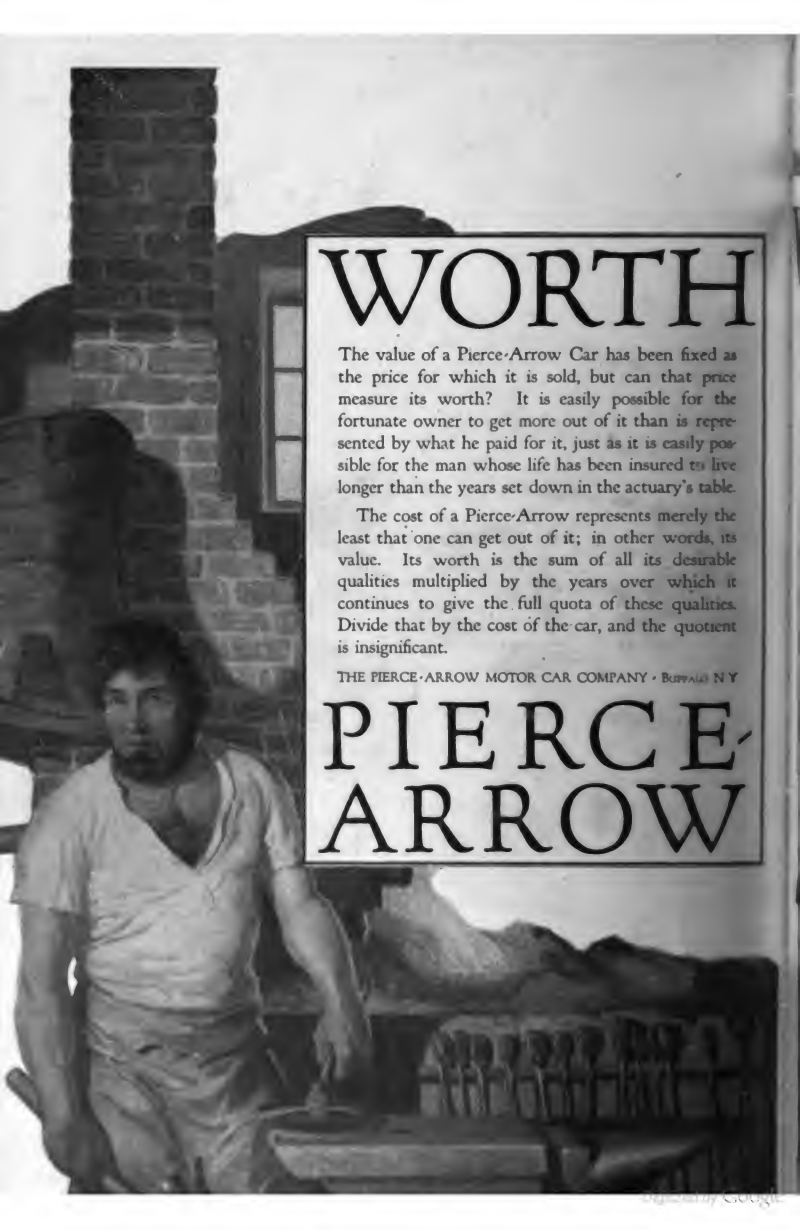
With amazing rapidity the nimble fingers of the typist must register, day in and day out, the thoughts that move the commerce of the world—a vocation that calls for food that keeps the mind alert and the muscles responsive.

Shredded Wheat

is a perfect food for all workers whose employment calls for quick thinking and quick acting. It is not a "proteid food" nor a "carbohydrate food," but just an all-around, well-balanced ration containing just enough muscle-making material and just enough energy and heat-creating material for outdoor work or indoor work. For breakfast or luncheon, with milk or cream, with baked apple, sliced bananas or other fruits.

Made only by

The Shredded Wheat Company, Niagara Falls, N. Y.



WORTH

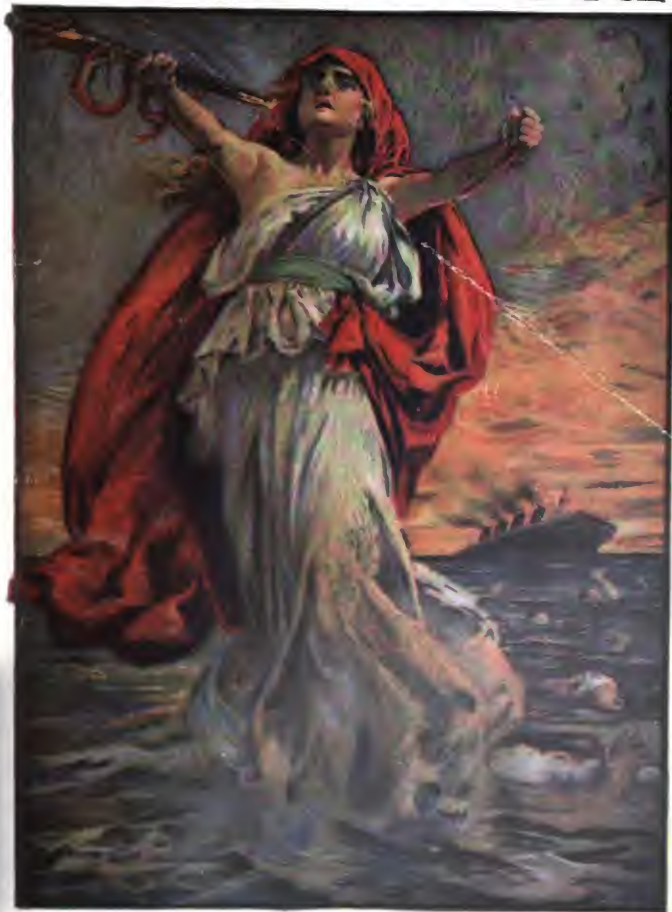
The value of a Pierce-Arrow Car has been fixed as the price for which it is sold, but can that price measure its worth? It is easily possible for the fortunate owner to get more out of it than is represented by what he paid for it, just as it is easily possible for the man whose life has been insured to live longer than the years set down in the actuary's table.

The cost of a Pierce-Arrow represents merely the least that one can get out of it; in other words, its value. Its worth is the sum of all its desirable qualities multiplied by the years over which it continues to give the full quota of these qualities. Divide that by the cost of the car, and the quotient is insignificant.

THE PIERCE-ARROW MOTOR CAR COMPANY • BUFFALO, N. Y.

PIERCE- ARROW

THE WAR MANUAL
MARCH 1917 THE 25 CENTS
WORLD'S WORK



STANDING FOR AMERICAN RIGHTS



Caruso
as Rhodamea
in Aida



Masterpieces of opera by the world's greatest artists

The mere mention of opera suggests Caruso, Alda, Braslau, Calvé, Desjourné, Farrar, Gadski, Galli-Curci, Garrison, Gluck, Hempel, Homer, Journet, Martinelli, McCormack, Melba, Ruffo, Schumann - Heink, Scotti, Sembrich, Tetrizzini, Whitehill—the commanding personalities who dominate the operatic stage.

These renowned artists in full realization and acknowledgment that the Victor alone reproduces their art with absolute fidelity, make records for the Victor exclusively.

Any Victor dealer will gladly play any music you wish to hear, and give you a copy of the Victor Record catalogue—the most complete catalogue of music in all the world.

Victor Talking Machine Co.
Camden, N. J., U. S. A.

Berliner Gramophone Co., Montreal, Canadian Distributors

Important Notice. All Victor Talking Machines are patented and are only licensed, and with right of use with Victor Records only. All Victor Records are patented and are only licensed, and with right of use on Victor Talking Machines only. Victor Records and Victor Machines are scientifically coordinated and synchronized by our special processes of manufacture; and their use, except with each other, is not only unauthorized, but damaging and unsatisfactory.

Victor Supremacy



THE WORKERS OF THE WORLD



Profit or loss in business is largely a question of bookkeeping. You are not "making money" unless there is more money coming in than there is going out. And the bookkeeper cannot keep at top-notch mental and physical condition unless he eats food that replenishes the daily waste of tissue and energy.

Shredded Wheat

is the favorite food of men and women whose employment calls for long continued mental concentration with little physical exercise. It is more easily digested and is a better-balanced ration than meat or starchy vegetables. It supplies the maximum of nutriment with the least tax upon the eliminating organs. For breakfast or lunch eat one or two Biscuits with hot milk and a little cream. Delicious with baked apples, sliced bananas or other fruits.

Made only by

The Shredded Wheat Company, Niagara Falls, N. Y.



1211 E. LINDSEY BOULEVARD
H. V. WATSON VICE PRESIDENT
ST. LOUIS, MO. 63107

PIONEER LIFE INSURANCE CO

OF AMERICA
RECEIVED CITY, MO.

Refer to
Mr. Colgate

Sept 11th 1916

Colgate
N. York

Question = Increase the enjoyment of shaving? It can't be done when one uses Colgate Shaving Cream, you are attempting the impossible when you advocate it. You are attempting to build up the sale of your Tale Powder, Lilac Imperial Water and Charmin Cold Cream on a false foundation. Take your Shaving Cream, a good razor and use plenty of water and you have the cream of shaving enjoyment.

It might have been more readily accepted if we had not "increased" it.

Back up!

My truly yours
M. P. Peterson.

the excellent known Shaving Comfort insurance is well life insurance. The same with a Colgate Shave

Increase Your Enjoyment of Shaving

Colgate's Tale Powder
After shaving, wash the face and dry. Sprinkle the Tale Powder on the palm of the hand and rub over the face.

or Colgate's Lilac Imperial Water
After shaving, wash the face and dry. Sprinkle the Lilac Imperial on the palm of the hand, put the face gently.

or Colgate's Charmin Cold Cream
After shaving, wash the face and dry. Rub the Charmin Cold Cream on the face. With the face dry, some prefer a dry, some prefer a moist.

This circular is signed the letter and our comments. Colgate & Co., Est'd 1806, New York

APRIL 1917

25 CENTS

The WORLD'S WORK



AMERICA IN THE BATTLE LINE OF DEMOCRACY

"That the *world* shall, under God,
have a new birth of freedom, and
that government of the people, by
the people, for the people shall not
perish from the earth"



Photo
White

Oscar
Saenger

The Victor Company
announces
a complete course
in vocal training
by **Oscar Saenger**
in twenty lessons
on ten Victor Records
\$ 25

Soprano; Mezzo-Soprano; Tenor; Baritone; or Bass

Every student of vocal music, every aspiring young singer, every one who has a voice, even though it be untrained, can now develop his or her talents under the direction of Oscar Saenger—America's greatest and most successful vocal teacher.

No matter where they may live, all those who wish to sing may now learn to do so under the direction of a master who is credited with having entered more pupils upon successful operatic, oratorio or concert careers than has any other teacher in the United States.

The Oscar Saenger Course in Vocal Training consists of ten double-faced Victor Records, which provide twenty lessons in vocalization.

There is a separate set of records for each of the following five voices: Soprano, Mezzo-Soprano, Tenor, Baritone, and Bass.

For each set of lessons, perfect examples of tone production have been secured through Oscar Saenger's personal choice of the artists best qualified to serve as exemplars.

The Oscar Saenger Course in Vocal Training for any of the voices mentioned above, may be procured from any Victor dealer at \$25—the cost of a one-hour lesson at the Saenger Studio in New York.

Write for an illustrated booklet

giving full information about the series of Victor Records of the Oscar Saenger Course in vocalization. We will gladly send a copy upon receipt of your request.

Important Notice: All Victor Talking Machines are patented and are only *licensed*, and with right of use with Victor Records only. All Victor Records are patented and are only *licensed*, and with right of use on Victor Talking Machines only. Victor Records and Victor Machines are scientifically coordinated and synchronized by our special processes of manufacture; and their use, except with each other, is not only unauthorized, but damaging and unsatisfactory.

Victrola

"Victrola" is the Registered Trade-mark of the Victor Talking Machine Co. designating the products of this Company only.

Warning: The use of the word **Victrola** upon or in the promotion or sale of any other Talking Machine or Phonograph products is misleading and illegal.

Victor Talking Machine Co., Camden, N. J.
Berliner Gramophone Co., Montreal, Canadian Distributors





THE WORKERS OF THE WORLD



The men who climb to dizzy heights in business—the top-notchers in every realm of human endeavor—must have that steady nerve, mental poise and physical endurance that come from living in harmony with natural law. Get right with Nature by eating

Shredded Wheat Biscuit

a simple, natural, elemental food that supplies, in well-balanced proportion, every element needed to build the perfect man or woman fit for every job that calls for a clear brain in a supple, responsive body. Contains all the muscle-making, heat-creating material in the whole wheat grain made digestible by steam-cooking, shredding and baking. A food for men and women who do things. Two biscuits with hot milk, or cream, make a complete, nourishing meal at a cost of four or five cents. Delicious with fruits.

Made only by

the Shredded Wheat Company, Niagara Falls, N.Y.

Even if you oversleep
you needn't undershave



If you *must* shave in a hurry, you *can*, with Colgate's Rapid-Shave Powder. Shake a little on to the wet brush and work up the lather right on the moistened face—only a short time needed with

COLGATE'S RAPID-SHAVE POWDER

TRADE MARK

Colgate's lathers instantly and softens the beard thoroughly *without* any mussy "rubbing in" with the fingers. Your razor works swiftly, easily. Colgate's lather does *not* cling to the razor edge and "slow you up."



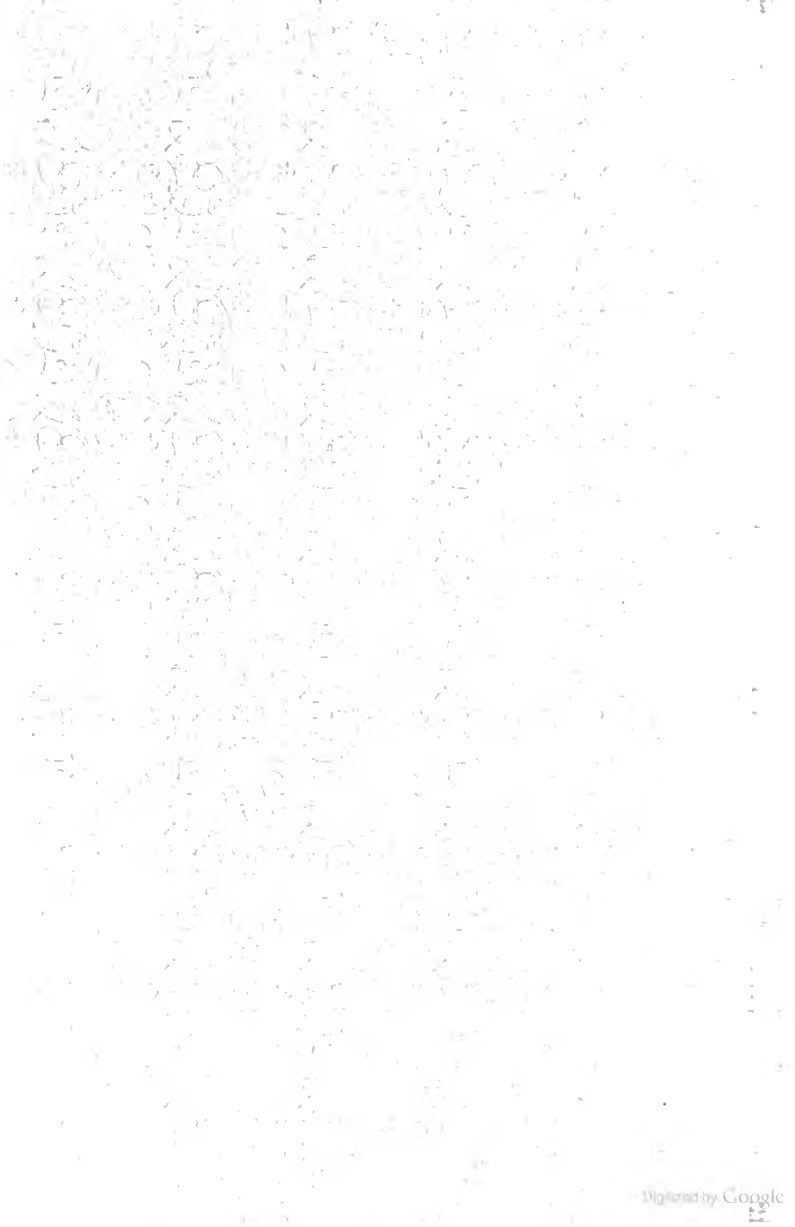
And when you're done, the soap washes off easily. No soap is left in the pores. Colgate's Rapid-Shave Powder will gain you time and comfort. The same perfect lather with Colgate's Shaving Stick or Colgate's Shaving Cream. A trial size of any one sent for 4c in stamps.

COLGATE & CO.,

Dept. T 199 Fulton St., New York

Makers of Cashmere Bouquet Soap—luxurious, lasting, refined.

A new size at 10c a cake.



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